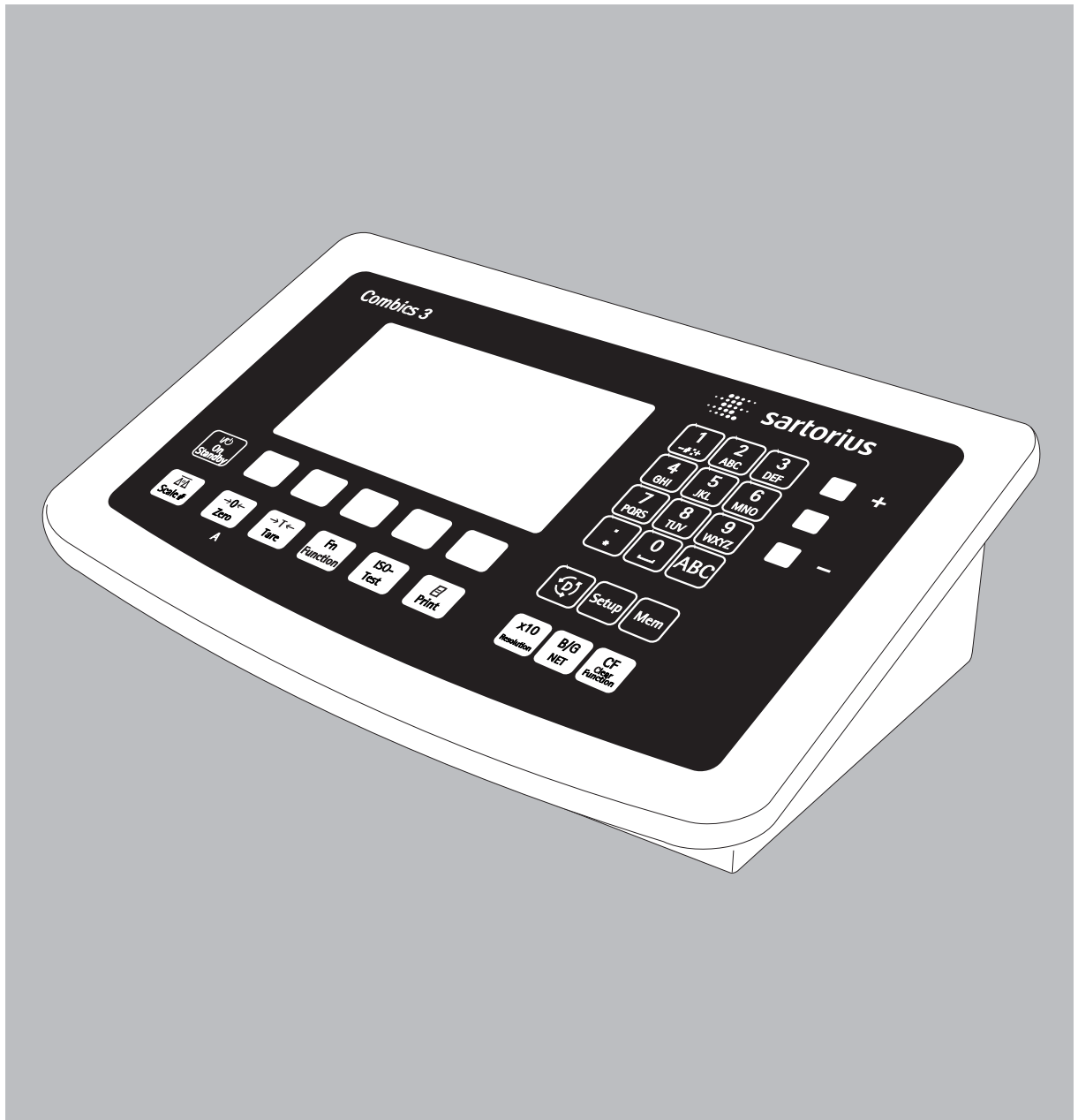


Operating Instructions

Sartorius Combics 3, Options H0 and I2

Models CAIS.3 | CAH3... | CAW3...

Basic Application Programs



Combics 3 is a rugged, easy-to-use indicator for the complex quality control tasks you perform every day. It meets the highest requirements placed on the accuracy and reliability of weighing results in the following areas:

- The food industry
- The pharmaceutical industry
- The chemical industry
- The electronics and metal industries.

Combics 3 indicators are:

- rugged, thanks to their stainless steel housing
- easy to operate, thanks to the following features:
 - large keys with positive click action
 - alphanumeric keypad with “ABC” input
 - large, backlit, fully graphic-capable dot-matrix display
 - text prompts for operator guidance
 - are easy to clean and disinfect
 - can be operated independently of the weighing platform location
 - have a range of interfaces for flexible use
 - offer password-protection to prevent unauthorized alteration of operating parameters

Combics 3 indicators speed up your routine procedures with:

- Fast response times
- Built-in application programs for calculation and display of weight values

Application 1:

- Counting
- Neutral measurement
- Averaging (animal weighing)
- Weighing in percent

Application 2:

- Checkweighing
- Classification

Application 3:


- Net total formulation
- Totalizing
- Simple function for assigning up to 4 alphanumeric lines for identifying weight values
- Connectivity for two weighing platforms
- Automatic initialization when the scale is switched on
- Automatic taring when a load is placed on the weighing platform
- Optional remote control using an external computer

Option I2:

Several applications can be combined

During operation, applications can be combined to solve more complex problems.

Select programs one after the other:

Toggle using the  key

Symbols

The following symbols are used in these instructions:

- Indicates steps you must perform
- Indicates steps you must perform only under certain conditions
- > Describes what happens after you have performed a particular step
- ⚠ Indicates a hazard








Application advice

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This manual describes the application programs in the Combics 3 indicator. For details on installation, weighing functions and device setup, please refer to the general operating instructions for the Combics 3.

Application Programs

Overview of Applications and Functions

Keys

Display

Combics 3

18 keys plus
numeric keypad
Graphic-capable
dot-matrix display

Application

Basic weighing	X
Send print job/data record to peripheral device	X
Label printer	X
Connection option for a second and third weighing platform	X
Counting	X
Neutral measurement	X
Averaging (animal weighing)	X
Weighing in percent	X
Checkweighing	X
Classification	X
Totalizing	X
Batching/Counting to target value	X

Function

Zero	X
Tare	X
Date/time	X
Internal battery (rechargeable)	Optional
ID codes (6 codes, 40 characters each)	X
Barcode	X
Automatic printout	X
Automatic taring	X
Manual taring	X
Analog data output	Optional
Selectable control inputs	X
Electronically isolated control inputs and outputs	Optional
Unit conversion	X
Increased resolution	X
GMP-compliant printout	X
Alibi memory	Optional
Product data memory	X





Combination of applications see “Combining Applications“

Counting

With the Counting application, you can determine the number of parts which each have approximately equal weight.

Characteristics

- Enter the reference sample weight “wRef” via the keypad
- Save the reference weight “wRef” from the weighing platform
- Enter the reference sample quantity “nRef” via the keypad
- Enter reference sample weight using a barcode scanner
- Automatic average piece weight updating
- Counting with two weighing platforms
- Activate info mode by pressing  (> 2 sec)
- Toggle the display between piece and weight by pressing the **Weighing** and **Counting** soft keys
- Define the level of accuracy (display resolution) applied when a calculated reference sample quantity is saved
- Automatic taring of container weight
Configured in Setup under:
Application parameters:
Autotare 1st weight
- Automatic initialization when the scale is switched on. The indicator is initialized with the most recently used values for reference sample quantity “nRef” and reference sample weight “wRef.”
Configured in Setup under:
Application parameters: **Autostart app when power is on**
- Exit application, delete parameters:

You can assign different functions to the  key for deleting applications. When you clear applications, you can delete either the data stored for all applications or just selected data stored for the active application. Configured in Setup under:
Application parameters: **CF function in applications**

- Restore factory default settings.
Configured in Setup under:
Application parameters:
Factory settings

Soft Key Functions

Start	Begin calculation of the reference sample weight “wRef.” *
nRef	Save the value entered as the reference weight Begin calculation of the reference sample weight “wRef.” *
wRef	Save the value entered as the reference sample weight
n=	Begin calculation of the reference sample weight “wRef.” *
Weighing	Toggle the display from piece count to weight
Counting	Toggle the display from weight to piece count

* Calculation is based on the active net weight value and the number of pieces entered.


Before the quantity on the platform can be calculated, the average piece weight must be entered in the application. There are three ways to enter this value in the program:

- Calculation:
 - Place the number of parts defined as the reference sample quantity on the weighing platform and calculate the average piece weight by pressing the **Start** or **n=** soft keys
 - Place any number of parts on the weighing platform, enter the number of parts using the keypad, and then press the **nRef** soft key.

How the reference weight is calculated depends on the application setting for resolution. The value is either rounded off in accordance with the display resolution, or saved with 10-fold or 100-fold resolution, or with the maximum internal resolution of the weighing platform.

- Enter a reference sample weight (i.e., the weight of one piece) using the keypad and press **wRef** to save it.
- Enter the reference sample weight using a barcode scanner

After initialization, you can use the connected weighing platform to count parts.

The initial application values remain active until deleted by pressing the  key or until overwritten by a new value. They also remain saved after you turn off the CombiCS 3.

Preparation

- Select Setup: Press the **[Setup]** key
- Select Application Parameters:
Press the **➤** soft key
- Select the Counting application:
Press the **➤** soft key

Application 1: Counting

- Minimum load for initialization
 - ☐ 1 digit
 - ☐ 2 digits
 - ☐ 5 digits
 - ☐ 10 digits
 - ☐ 20 digits
 - ☐ 50 digits
 - ☐ 100 digits
 - ☐ 200 digits
 - ☐ 500 digits
 - ☐ 1000 digits
- Accuracy - avg. piece wt. calc.
 - ☐ Display accuracy
 - ☐ Display accuracy + 1 decimal place
 - ☐ Display accuracy + 2 decimal places
- Save weight
 - ☐ Standard stability parameter
 - ☐ Increased stability parameter
- Average piece weight updating
 - ☐ Off
 - ☐ Automatic
- Scale for reference weight
 - ☐ Do not change
 - ☐ WP 1 scale
 - ☐ WP 2 scale
 - ☐ WP 3 scale

Application parameters

- Autotare 1st weight
 - ☐ Off
 - ☐ On
- Min. load f. auto. taring/printout
 - ☐ 1 digit
 - ☐ 2 digits
 - ☐ 5 digits
 - ☐ 10 digits
 - ☐ 20 digits
 - ☐ 50 digits
 - ☐ 100 digits
 - ☐ 200 digits
 - ☐ 500 digits
 - ☐ 1000 digits
- Autostart app when power is on
 - ☐ On
 - ☐ Off
- CF function in applications ¹⁾
 - ☐ Clears all applications
 - ☐ Clear only selected applications
- Factory setting Application only
 - ☐ Yes
 - ☐ No

o = Factory setting

¹⁾ For option I2 only

- To save settings and exit the Setup menu: Press the **[Setup]** key or the **◀◀** soft key

Parameter for Saving Weight Values

The weight on the platform is saved as a reference value when the platform has stabilized. "Stability" is defined as the point at which the fluctuation of a measured value lies within a defined tolerance range. The narrower the tolerance range, the more stable the platform is at "stability."

In Setup, under:

Application 1:
Counting: Save weight

You can define whether the value is saved when "standard stability" is reached, or only at "increased stability" (narrower tolerance range). If you select **increased stability** the value saved for average piece weight will be more accurate and the results more reproducible, but the response time of the weighing platform might be longer.

Accuracy Level for Calculating Average Piece Weight

The resolution applied for calculating the reference weight is defined in Setup under:

Application 1:
Counting: Accuracy - avg. piece wt. calc.

The resolution for calculating the reference weight is increased if "+1 decimal place" or "+2 decimal places" is selected. "+1 decimal place" increases the resolution of the net value by one step (display resolution x 10), "+2 decimal places" increases it two steps (display resolution x 100).

Minimum Load

The minimum load required for initialization of the weighing platform is configured in Setup under:

Application 1:
Counting: Minimum load for initialization

Once the limit is exceeded by the load, initialization can begin. If the load on platform is too light, the following will occur when you try to save a value:

- Error code **Inf 29** appears
- A warning signal is emitted (double-beep)
- The weighing platform is not initialized
- The preset reference sample quantity is saved

The minimum load required for automatic taring of the container weight on the platform (first weight) is configured in Setup under:

Application parameters:
Min. load f. auto. taring/printout

You can choose from the following 10 levels for this setting:

- 1 digit
- 2 digits
- 5 digits
- 10 digits
- 20 digits
- 50 digits
- 100 digits
- 200 digits
- 500 digits
- 1000 digits

The "digits" here refer to the scale intervals in the connected weighing platform. If the interval of the connected platform is 1 g, for example, and 1000 digits are required, you must place at least 1000 g (= >1000 intervals = 1000 digits) on the weighing platform for initialization.

Counting

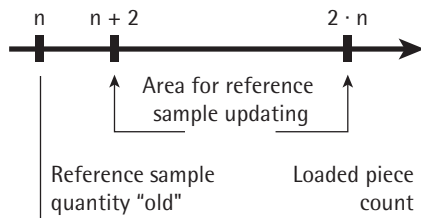
Average Piece Weight Updating

In the Setup menu:

Application 1:
Counting: Average
piece weight updating

You can define whether or not the reference sample weight is updated automatically during weighing. The average piece weight is updated automatically only when the following 6 criteria are met:

1. The **Automatic** setting is selected in the Setup menu
2. The current piece count exceeds the original piece count by at least two
3. The current piece count is less than twice the original piece count (does not apply for the first updating operation if the piece count is entered using the keypad or a barcode scanner)



4. The current piece count is less than 1000
5. The piece count calculated internally (e.g. 17.24) must deviate less than ± 0.3 pieces from the total number (in the example: 17)
6. The weighing platform is stable in accordance with the parameter defined for saving weights.

If automatic average piece weight updating is selected in the Setup menu and the piece count (pcs) is displayed, the **Auto** symbol is displayed below the bar graph. If the reference sample weight has been updated since you began weighing, the text line shows the "optimized" code **(opt.)**. During an updating operation, **Ref** and the updated piece count are displayed briefly in the measured value line.

An acoustic signal indicates updating is complete. The new reference sample weight and reference sample quantity are saved.

Counting with Two Weighing Platforms

You can use two weighing platforms simultaneously with the Counting application. When using two platforms, you can choose from the following operating modes:

- Counting with two platforms of the same type
- Counting with one reference platform and one weighing platform

Counting with two platforms of the same type:

Use this mode to count different types of sample material with different weights. For example, count the lighter-weight pieces on one platform and the heavier pieces on another.

You can define one of the two platforms as the default scale.

This is configured in Setup, under:

Device parameters:
Operating parameters:
Main scale

This is the first platform active when you switch on the Combics, regardless of the setting for automatic initialization of the Counting application.

Counting with one reference platform and one weighing platform

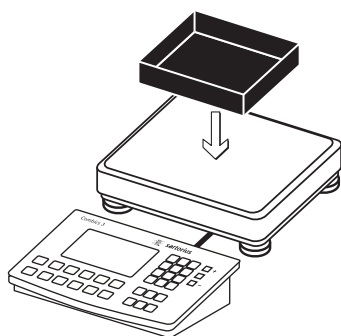
In this operating mode, the reference platform is a high-resolution weighing platform with a relatively low maximum capacity. The other platform is used for weighing heavier samples, and has a high capacity with a relatively low resolution.

This allows you to both determine the reference sample weight with high resolution; i.e., very precisely, and to count large amounts of parts, without requiring an expensive high-resolution, high-capacity weighing platform. The system can be configured to switch automatically to the reference platform for initialization (the measured value line shows **Ref**). Following initialization, you can switch to the counting platform.

The definition of one weighing platform as a reference platform is configured in Setup, under:

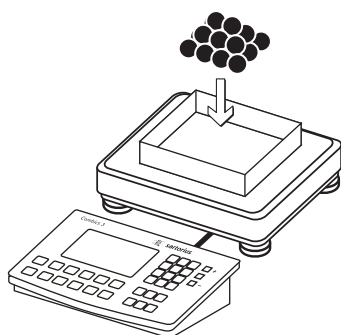
Application 1:
Counting: Scale for
reference weight

If automatic average piece weight updating is enabled, the update is performed on the active platform; in other words, the system does not automatically switch to the reference platform.



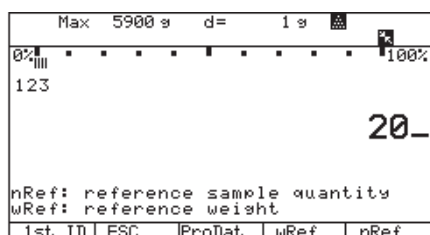
Example: You need to determine an unknown number of parts and the measurements should be logged. Configuration: The “Counting” application is selected, and printout has been set up.

- ▶ Place empty container on the scale.
- ▶ Press the $\rightarrow T \leftarrow$ key to tare the scale.
Note: If the automatic tare function is enabled (see chapter “Operation” in the “Weighing” section), you do not need to press the $\rightarrow T \leftarrow$ key. The tare weight is saved automatically when you place the container on the platform.

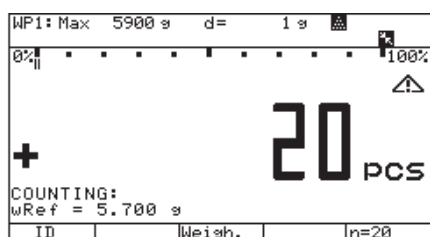


- ▶ Place a number of parts in the container for the reference quantity (in this example, 20 pcs).
- ▶ Press the $\boxed{2} \boxed{0}$ keys to enter the number of reference parts via the keypad.

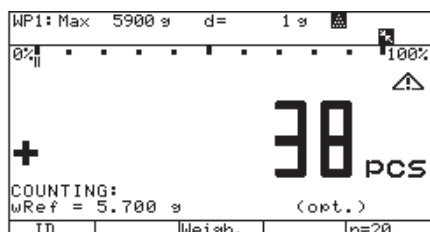
- ▶ Press the “nRef” soft key to start the calculation of the reference sample weight.



- ▶ The “wRef” reference weight is displayed in the bottom right.
- ▶ Add a quantity of uncounted parts to the container.



- ▶ The result is displayed.
- ▶ If automatic reference sample updating is enabled, the newly calculated reference weight appears in the displayed with “(out.)”.
- ▶ Press the $\boxed{P} \leftarrow$ key to print the results (see “Printout Configuration”).



```


nRef + 20 pcs
wRef + 5.684 g
G# + 320.6 g
T + 103.8 g
N + 216.8 g
Qnt + 38 pcs
.....


```

Neutral Measurement

With this application you can use your weighing platform to measure the length, surface and volume of parts that have roughly the same specific weight. The ρ symbol is displayed as the weight unit.

Characteristics

- Enter the reference weight “wRef” via the keypad
- Save the reference weight “wRef” from the weighing platform
- Enter the calculation factor “nRef” using the keypad
- Enter reference sample weight using a barcode scanner
- Measure with two weighing platforms
- Activate info mode by pressing  (> 2 sec)
- Toggle the display between measurement and weight by pressing the **Weighing** and **Measurement** soft keys
- The level of accuracy (display resolution) can be set when the calculated reference weight is applied
- Automatic taring of container weight
Configured in Setup under:
Application
parameters: Autotare
1st weight
- Automatic initialization when the scale is switched on. The indicator is initialized with the most recently used calculation factor “nRef” and reference weight “wRef.” Configured in Setup under:
Application
parameters: Autostart
app when power is on
- Exit application, delete parameters:

You can assign different functions to the  key for deleting applications. When you clear applications, you can delete either the data stored for all applications or just selected data stored for the active application. Configured in Setup under:

Application
parameters:
CF function in
applications


- Restore factory default settings.
Configured in Setup under:
Application
parameters: Factory
setting

Soft Key Functions

Start	Begin calculation of the reference weight “wRef.” *
nRef	Save the value entered as the calculation factor Begin calculation of the reference weight “wRef.” *
wRef	Save the value entered as the reference weight
n=	Begin calculation of the reference weight “wRef.” *
Weighing	Toggle the display from the neutral measurement application to weight
Measurement	Toggle the display from weight to the neutral measurement application
*	The calculation is based on the active net weight value and the calculation factor entered.

In order to calculate the length, surface or volume of a given sample, the average weight of a reference quantity of the sample must be known (in the example below, the reference is 1 meter of electrical cable). There are three ways to enter the reference weight in the program:

- Calculation:
 - Place the reference quantity (defined by the calculation factor) on the connected weighing platform and calculate the reference weight by pressing the **Start** or **n=** soft keys.
 - Place any amount of the sample material on the connected weighing platform, enter the calculation factor via the keypad, and press the **nRef** soft key to calculate the reference weight.
- How the reference weight is calculated depends on the application setting for resolution. The value is either rounded off in accordance with the display resolution, or saved with 10-fold or 100-fold resolution, or with the maximum internal resolution of the weighing platform.
- Keypad input: enter the reference weight (i.e., the weight of one meter of electrical cable) using the keypad and press the **wRef** soft key to save it.
- By using a barcode scanner

The initial application values remain active until deleted by pressing the  key or until overwritten by a new value. They also remain saved after you turn off the CombiCS 3.

Preparation

- Select Setup: Press the **[Setup]** key
- Select Application Parameters: Press the **→** soft key
- Select the Neutral Measurement application: Press the **→** soft key

Application 1: Neutral Measurement

- Minimum load for initialization
 - o 1 digit
 - 2 digits
 - 5 digits
 - 10 digits
 - 20 digits
 - 50 digits
 - 100 digits
 - 200 digits
 - 500 digits
 - 1000 digits
- Accuracy f. reference val. calc.
 - o Display accuracy
 - Display accuracy + 1 decimal place
 - Display accuracy +2 decimal places
- Decimal places in displayed result
 - o None
 - 1 digit
 - 2 digits
 - 3 digits
- Save weight
 - o Standard stability parameter
 - Increased stability parameter
- Scale for reference weight
 - o Do not change
 - WP 1 scale
 - WP 2 scale
 - WP 3 scale

Application parameters

- Autotare 1st weight
 - o Off
 - On
- Min. load f. auto. taring/printout
 - 1 digit
 - 2 digits
 - 5 digits
 - o 10 digits
 - 20 digits
 - 50 digits
 - 100 digits
 - 200 digits
 - 500 digits
 - 1000 digits
- Autostart app when power is on
 - On
 - o Off
- CF function in applications ¹⁾
 - o Clears all applications
 - Clear only selected applications
- Factory setting Application only
 - Yes
 - o No

o = Factory setting

¹⁾ For option I2 only

- To save settings and exit the Setup menu: Press the **[Setup]** key or the **←←** soft key

Parameter for Saving Weight Values

The reference weight is saved when the scale has stabilized.

“Stability” is defined as the point at which the fluctuation of a measured value lies within a defined tolerance range. The narrower the tolerance range, the more stable the platform is at “stability.”

In Setup, under:

Application 1:
Neutral measurement:
Save weight

You can define whether the value is saved when “standard stability” is reached, or only at “increased stability” (narrower tolerance range). If you select **increased stability parameter**, the reference weight saved will be more accurate and the results more reproducible, but the response time of the weighing platform might be longer.

Accuracy Level for Calculation of Reference Value

The resolution applied for calculating the reference weight is defined in Setup under:

Application 1:
Neutral measurement:
Accuracy f. reference val. calc. The resolution for calculating the reference weight is increased if “+1 decimal place” or “+2 decimal places” is selected. “+1 decimal place” increases the resolution of the net value by one step (display resolution x 10), “+2 decimal places” increases it two steps (display resolution x 100).

Decimal Places in Displayed Result

In neutral measurement, not only whole numbers but also decimal numbers (for example, 1.25 ϕ electrical cabling) can be displayed. The number of decimal places displayed in neutral measurement is configured in Setup under:

Application 1:
Neutral measurement:
Decimal places in displayed result

Minimum Load

The minimum load required for initialization of the weighing platform is configured in Setup under:

Application 1:
Neutral measurement:
Minimum load for initialization

Once the limit is exceeded by the load, initialization can begin. If the load on platform is too light, the following will occur when you try to save a value:

- Error code **Inf 29** appears
- A warning signal is emitted (double-beep)
- The weighing platform is not initialized
- The preset calculation factor is saved

The minimum load required for automatic taring of the container weight on the platform (first weight) is configured in Setup under:

Application parameters:
Min. load f. auto. taring/printout

You can choose from the following 10 levels for this setting:

- 1 digit
- 2 digits
- 5 digits
- 10 digits
- 20 digits
- 50 digits
- 100 digits
- 200 digits
- 500 digits
- 1000 digits

The “digits” here refer to the scale intervals in the connected weighing platform. If the interval of the connected platform is 1 g, for example, and 1000 digits are required, you must place at least 1000 g (= >1000 intervals = 1000 digits) on the weighing platform for initialization.

Neutral Measurement

Neutral Measurement with Two Weighing Platforms

You can use two weighing platforms simultaneously with the Neutral Measurement application. When using two platforms, you can choose from the following operating modes:

- Neutral measurement with two weighing platforms
- Neutral measurement with one reference platform and one weighing platform

Neutral measurement with two platforms of the same type:

Use this operating mode to measure different types of sample material with different weights. For example, measure the lighter-weight samples on one platform and the heavier samples on another.

You can define one of the two platforms as the default scale.

This is configured in Setup, under:

Device parameters:
Operating parameters:
Main scale

This is the first platform active when you switch on the Combi 3, regardless of the setting for automatic initialization of the Neutral Measurement application.

Neutral measurement with one reference platform and one weighing platform:

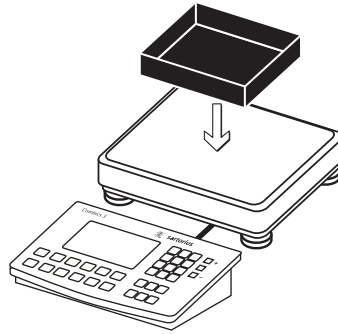
In this operating mode, the reference platform is a high-resolution weighing platform with a relatively low maximum capacity. The other platform is used for weighing heavier samples, and has a high capacity with a relatively low resolution.



This allows you to both determine the reference weight with high resolution; i.e., very precisely, and to measure large samples, without requiring an expensive high-resolution, high-capacity weighing platform.

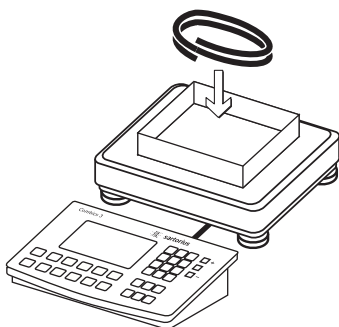
The system can be configured to switch automatically to the reference platform for initialization (the measured value line shows **Ref**). Following initialization, the platform for larger amounts is automatically activated. The definition of one weighing platform as a reference platform is configured in Setup, under:

Application 1:
Neutral measurement:
Scale for reference weight

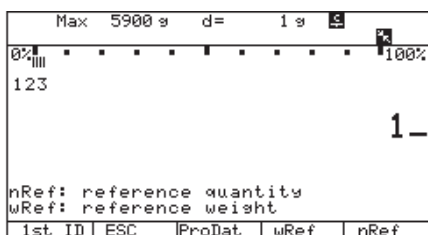
Example: 25 m of electrical cable is to be measured. Configuration: The “Neutral measurement” application is selected, and a printout has been set up.



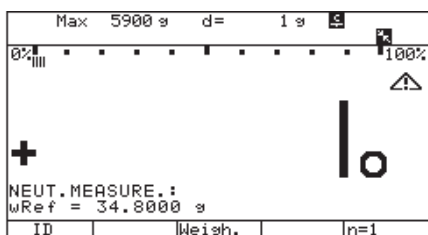
- Place empty container on the scale.
- Press the  key to tare the scale.
Note: If the automatic tare function is enabled (see chapter “Operation” in the “Weighing” section), you do not need to press the  key. The tare weight is saved automatically when you place the container on the platform.



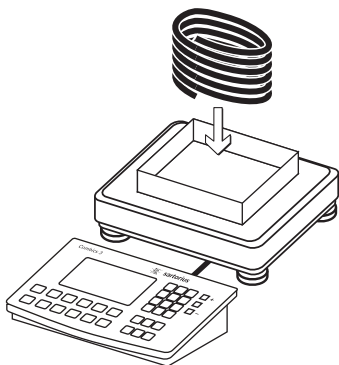
- Place 1 m of cable into the container.



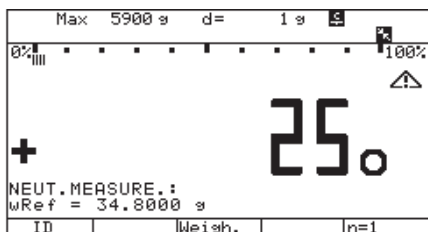
- Press the **1** key to enter the measured value via the keypad (in this example, 1 m).
- Press the **nRef** soft key to apply the value and start the calculation of the reference weight.



- The **wRef** reference weight is displayed on the bottom left.



- Place the desired amount of cable into the container (in this example, 25 m)



- The result is displayed.
- Press the **(F)** key to print the results (to configure printouts see **"Data Interfaces"**, section **"Configuring Printouts"**).

nRef		1 o
wRef	+	34.8 g
G#	+	982.3 g
T	+	103.7 g
N	+	878.6 g
Qnt	+	25 o

Averaging (Animal Weighing)

With the Averaging application, you can use your weighing platform for calculating weights as the average of a number of individual weighing operations. These individual operations are also known as “subweighing operations.”

This function is used to determine weights under unstable ambient conditions or for weighing unstable samples (such as live animals).

Characteristics

- Averaging started manually or automatically. Configured in Setup under: **Application 1: Animal weighing: Start**
With manual start selected, the averaging routine begins when you press a key (provided the start conditions are met). With automatic start selected, averaging begins when you place the first load on the platform (provided the start conditions are met).
- Enter the number of subweighing operations using the keypad
- Info mode
- Toggle the display from “result of last measurement” to “current weight” by pressing the **Weighing** and **Result** soft keys
- Automatic printout configured in Setup under: **Application 1: Animal weighing: Auto printout of results**
- Automatic taring of container weight
Configured in Setup under: **Application parameters: Autotare 1st weight**
- Automatic start of averaging when the scale is turned on and a sample placed on the platform (provided start conditions are met). Configured in Setup under: **Application parameters: Autostart app when power is on**

- Exit application, delete parameters:

You can assign different functions to the **CF** key for deleting applications. When you clear applications, you can delete either the data stored for all applications or just selected data stored for the active application. Configured in Setup under: **Application parameters: CF function in applications**

- Restore factory default settings.
Configured in Setup under: **Application parameters: Factory settings**

Soft Key Functions

Start	Begin averaging. The calculation is made when the specified number of subweighing operations have been completed.
mDef	<ul style="list-style-type: none">- Save the value entered as “Number of weighing operations for averaging.”- Begin averaging with the number of weighing operations entered as the basis
Weighing	Toggle to the weight display
Result	Toggle display to result of last measurement

A number of subweighing operations are required to form the basis for calculation of an average weight. You can enter the desired number of subweighing operations using the keypad.

The number you enter is active until it is overwritten by another number. It also remains in memory when you switch to a different application program, or turn off the Combits 3.

There are three ways to start the averaging routine:

- Manual start with preset number of subweighing operations:
Place the sample on the platform and press the **Start** soft key
- Manual start with user-defined number of subweighing operations:
Place the sample on the platform and enter the number of weighing operations using the keypad. Press the **mDef** soft key to save the number entered and begin weighing.
- Automatic start with preset number of subweighing operations:
Measurement begins when you place the first sample on the platform, provided the start conditions are met.

Preparation

- Select Setup: Press the **[Setup]** key
- Select Application Parameters:
Press the **>** soft key
- Select the Animal Weighing application:
Press the **>** soft key

Application 1: Animal weighing (averaging)

- Minimum load for starting
 - o 1 digit
 - 2 digits
 - 5 digits
 - 10 digits
 - 20 digits
 - 50 digits
 - 100 digits
 - 200 digits
 - 500 digits
 - 1000 digits
- Start
 - o Manual
 - Automatic
- Animal activity
 - 0.1% of the animal/object
 - o 0.2% of the animal/object
 - 0.5% of the animal/object
 - 1% of the animal/object
 - 2% of the animal/object
 - 5% of the animal/object
 - 10% of the animal/object
 - 20% of the animal/object
 - 50% of the animal/object
 - 100% of the animal/object
- Auto printout of results
 - o Off
 - On
- Show normal weight after unloading
 - o Threshold for load change
 - Toggle key

Application parameters

- Autotare 1st weight
 - o Off
 - On
- Min. load f. auto. taring/printout
 - 1 digit
 - 2 digits
 - 5 digits
 - o 10 digits
 - 20 digits
 - 50 digits
 - 100 digits
 - 200 digits
 - 500 digits
 - 1000 digits
- Autostart app when power is on
 - On
 - o Aus
- CF function in applications ¹⁾
 - o Clears all applications
 - Clear only selected applications
- Factory setting Application only
 - Yes
 - o No

o = Factory setting

¹⁾ For option 12 only

- To save settings and exit the Setup menu: Press the **[Setup]** key or the **<<** soft key

Minimum Load

The minimum load required for initialization of the averaging routine is configured in Setup under:

**Application 1:
Animal weighing:
Minimum load for
starting**

Setting a minimum load for averaging can be especially useful if you configure automatic start of measurement.

The minimum load required for automatic taring of the container weight on the platform (first weight), or for automatic printout of results, is configured in Setup under:

**Application 1:
Animal weighing: Min.
load f. auto. taring**

You can choose from the following 10 levels for this setting:

- 1 digit
- 2 digits
- 5 digits
- 10 digits
- 20 digits
- 50 digits
- 100 digits
- 200 digits
- 500 digits
- 1000 digits

The “digits” here refer to the scale intervals in the connected weighing platform. If the interval of the connected platform is 1 g, for example, and 1000 digits are required, you must place at least 1000 g (= >1000 intervals = 1000 digits) on the weighing platform to start the averaging routine.

Starting the Measurements

The averaging routine does not begin until the fluctuation in weight value remains below a defined threshold over three consecutive measurements. The tolerance limit is defined as a percentage of the animal or object weight (for example, 0.1%, 0.2%, ..., 50%, 100%), configured in Setup under:

**Application 1:
Animal weighing:
Animal activity**

If the “Averaging” parameter is set to 2%, for example, and the animal or object weighs 10 kg, measurement does not begin until the fluctuation in weight value remains below 200g during three consecutive measurements.

Display

A calculated average value with the selected weight unit is shown continuously on the main display. The **a** symbol (indicating a calculated value) is also displayed.

You can toggle between this display to a readout of the current weight on the platform by pressing the **Weighing** and **Result** soft keys.

In the Setup menu, under:

**Application 1:
Animal weighing:
Show normal weight
after unloading**

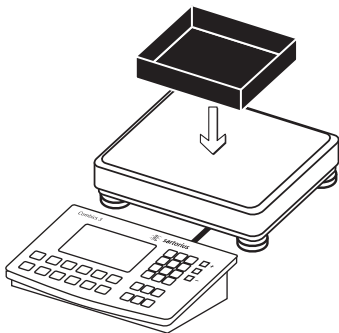
You can select **Threshold for load change** to have the display switch automatically to the weight readout when you unload the weighing platform (i.e., when the load is less than half the minimum load).

The result of the most recent averaging operation is not saved.

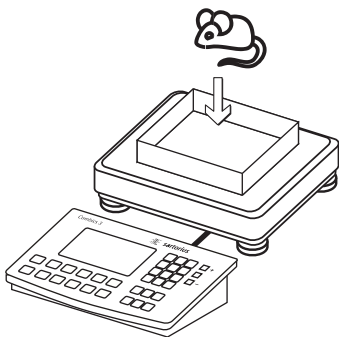
If you select **Toggle key**, the calculated average remains displayed even after the weighing platform is unloaded until you press the **[CF]** key or begin a new measurement.

Averaging (Animal Weighing) 🐭

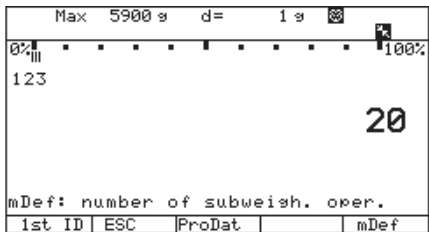
Example: The weight of one mouse should be measured.
Configuration: The “Animal weighing” application is selected, and a printout has been set up.



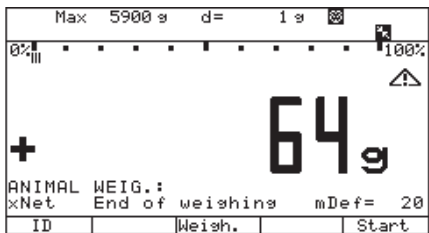
- ▶ Place empty container on the scale.
- ▶ Press the **[T]** key to tare the scale.
Note: If the automatic tare function is enabled (see chapter “Operation” in the “Weighing” section), you do not need to press the **[T]** key. The tare weight is saved automatically when you place the container on the platform.



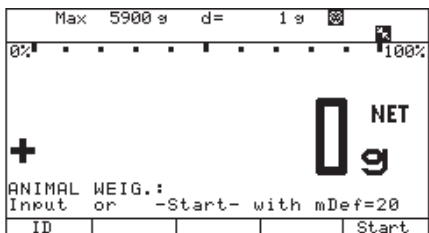
- ▶ Place the mouse in the container.



- Enter the number of subweighing operations using the keypad (in this example, 20 measurements).
- ▶ Press the **mDef** soft key to start the calculation of the reference sample weight.
- ▶ The averaging routine does not begin until the fluctuation in weight value remains below a defined threshold over three consecutive measurements. The number of subweighing operations remaining is shown in the numeric display.



- ▶ The averaging result is displayed.
- ▶ Press the **[P]** key to print the results (to configure printouts see “Data Interfaces”, section “Configuring Printouts”).
Note: If automatic printout of results is enabled, you do not need to press the **[P]** key. The results are printed automatically.




- ▶ When you unload the weighing platform, the display switches to the weight readout automatically, unless configured otherwise in the menu. The weighing instrument is ready for the next measurement.

```
mDef + 20
x-Net + 64.0 g
T + 103.8 g
-----
```

Weighing in Percent %

With the Weighing in Percent application, you can use your weighing platform to obtain weight readouts in percent which are in proportion to a reference weight. % is displayed as the weight unit.

Characteristics

- Enter the reference weight “Wxx%” for 100% using the keypad
- Save the current weight value as reference weight for the reference percentage “pRef”
- Enter the reference percentage “pRef” using the keypad
- Enter reference sample weight using a barcode scanner
- Display result as loss (difference) or residue
- Display up to 3 decimal places.
Configured in Setup under:
Application 1:
Weighing in percent:
Number of decimals for percentages
- Weighing in percent with two weighing platforms
- Activate info mode by pressing  (> 2 sec)
- Toggle the display between percentage and weight by pressing the **Weighing** and **Percent** soft keys
- Automatic taring of container weight
Configured in Setup under:
Application parameters:
Autotare 1st weight
- Automatic initialization when the scale is switched on. The application is initialized with the most recently saved data. Configured in Setup under:
Application parameters:
Autostart app when power is on

- Exit application, delete parameters:
You can assign different functions to the **c** key for deleting applications. When you clear applications, you can delete either the data stored for all applications or just selected data stored for the active application. Configured in Setup under:
Application parameters:
CF function in applications
- Restore factory default settings.
Configured in Setup under:
Application parameters:
Factory settings

Soft Key Functions

Start	Begin calculation of the reference weight *
pRef	<ul style="list-style-type: none"> – Save the value entered as the reference percentage – Begin calculation of the reference weight *
Wxx%	Save value entered as reference weight for 100%
p=	Begin calculation of the reference weight *
Weighing	Toggle the display from percentage to weight
Perc.	Toggle the display from weight to percentage

- * The calculation is based on the active net weight value and the percentage entered.

To determine the weight of a sample relative to a reference weight, you need to define the reference weight value. There are three ways to enter this value in the application program:

- Calculation:
 - Place the reference quantity (defined by the reference percentage) on the connected weighing platform and press the **Start** or **p=** soft keys to initialize the application.
 - Place any amount of the sample material on the connected weighing platform, enter the reference percentage through the keypad, and press the **pRef** soft key to initialize the application.

How the reference weight is calculated depends on the application setting that defines “Accuracy for saving weights”. The value is either rounded off in accordance with the display resolution, or saved with 10-fold or 100-fold internal resolution of the weighing platform.

- By entering the reference weight for 100% using the keypad and pressing the **Wxx%** soft key to initialize the application.
- By using a barcode scanner

The initialization data remains valid until deleted by pressing the **CF** key or until overwritten by a new value. It also remains saved after you turn off the CombiCS 3.

Weighing in Percent%

Preparation

- Select Setup: Press the **[Setup]** key
- Select Application Parameters:
Press the **➤** soft key
- Select the Weighing in Percent application:
Press the **➤** soft key

Application 1: Weighing in percent

- Minimum load for initialization
 - o 1 digit
 - o 2 digits
 - o 5 digits
 - o 10 digits
 - o 20 digits
 - o 50 digits
 - o 100 digits
 - o 200 digits
 - o 500 digits
 - o 1000 digits
- Accuracy for saving weights
 - o Display accuracy
 - o Display accuracy + 1 decimal place
 - o Display accuracy +2 decimal places
- Number of decimals for percentages
 - o None
 - o 1 digit
 - o 2 digits
 - o 3 digits
- Save weight
 - o Standard stability parameter
 - o Increased stability parameter
- Scale for reference weight
 - o Do not change
 - o WP 1 scale
 - o WP 2 scale
 - o WP 3 scale
- Display of calculated values
 - o Residual qty.
 - o Loss

Application parameters

- Autotare 1st weight
 - o Off
 - o On
- Min. load f. auto. taring/printout
 - o 1 digit
 - o 2 digits
 - o 5 digits
 - o 10 digits
 - o 20 digits
 - o 50 digits
 - o 100 digits
 - o 200 digits
 - o 500 digits
 - o 1000 digits
- Autostart app when power is on
 - o On
 - o Off
- CF function in applications ¹⁾
 - o Clears all applications
 - o Clear only selected applications
- Factory setting Application only
 - o Yes
 - o No

- o = Factory setting
- ¹⁾ For option I2 only

- To save settings and exit the Setup menu: Press the **[Setup]** key or the **⏮** soft key

Parameter for Saving Weight Values

The reference weight is saved when the scale has stabilized. "Stability" is defined as the point at which fluctuation of a measured value lies within a defined tolerance range. The narrower the tolerance range, the more stable the platform is at "stability."

In Setup, under:

**Application 1:
Weighing in percent:
Save weight**

You can define whether the value is saved when "standard stability" is reached, or only at "increased stability" (narrower tolerance range). If you select **increased stability parameter**, the reference weight saved will be more accurate and the results more reproducible, but the response time of the weighing platform might be longer.

Accuracy Level for Calculating Average Piece Weight

The resolution applied for calculating the reference weight is defined in Setup under:

**Application 1:
Weighing in percent:
Accuracy for saving weights.**

The resolution for calculating the reference weight is increased if "+1 decimal place" or "+2 decimal places" is selected. "+1 decimal place" increases the resolution of the net value by one step (display resolution x 10), "+2 decimal places" increases it two steps (display resolution x 100).

Display of Results

With the Weighing in Percent application, the result can be displayed as a remainder or loss. Configured in Setup under:

**Application 1:
Weighing in percent:
Display of calculated values**

Equations:

Residual = (current weight –
qty. 100% weight) / * 100

Loss = (current weight –
100% weight) /
100% weight * 100

Minimum Load

The minimum load required for initialization of the weighing platform is configured in Setup under:

**Application 1:
Weighing in percent:
Minimum load for initialization**

Once the limit is exceeded by the load, initialization can begin. If the load on platform is too light, the following will occur when you try to save a value:

- Error code **Inf 29** appears
- A warning signal is emitted (double-beep)
- The weighing platform is not initialized
- The preset reference percentage is saved

The minimum load required for automatic taring of the container weight on the platform (first weight) is configured in Setup under:

**Application
parameters: Min. load
f. auto. taring/
printout**

You can choose from the following 10 levels for this setting:

1 digit
2 digits
5 digits
10 digits
20 digits
50 digits
100 digits
200 digits
500 digits
1000 digits

The "digits" here refer to the scale intervals in the connected weighing platform. If the interval of the connected platform is 1 g, for example, and 1000 digits are required, you must place at least 1000 g (= >1000 intervals = 1000 digits) on the weighing platform for initialization.

Weighing in Percent with Two Weighing Platforms

You can use two weighing platforms simultaneously with the Weighing in Percent application. When using two platforms, you can choose from the following operating modes:

- Weighing in percent with two platforms of the same type
- Weighing in percent with one reference platform and one weighing platform

Weighing in percent with two platforms of the same type:

Use this operating mode to measure different types of sample material with different weights. For example, measure the lighter-weight samples on one platform and the heavier samples on another.

You can define one of the two platforms as the default scale.

This is configured in Setup, under:

Device parameters:
Operating parameters:
Main scale

This is the first platform active when you switch on the Combics 3, regardless of the setting for automatic initialization of the Weighing in Percent application.

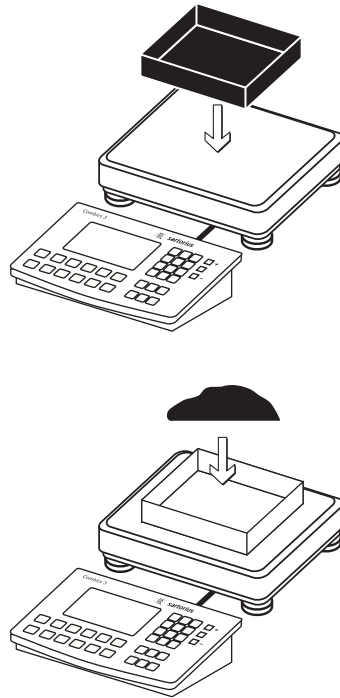
Weighing in percent with one reference platform and one weighing platform
In this operating mode, the reference platform is a high-resolution weighing platform with a relatively low maximum capacity. The other platform is used for weighing heavier samples, and has a high capacity with a relatively low resolution.

This allows you to both determine the reference weight with high resolution; i.e., very precisely, and to measure large samples, without requiring an expensive high-resolution, high-capacity weighing platform.

The system can be configured to switch automatically to the reference platform for initialization (the measured value line shows Ref). Following initialization, the platform for larger amounts is automatically activated.

The definition of one weighing platform as a reference platform is configured in Setup, under:

Application 1:
Weighing in percent:
Scale for reference weight



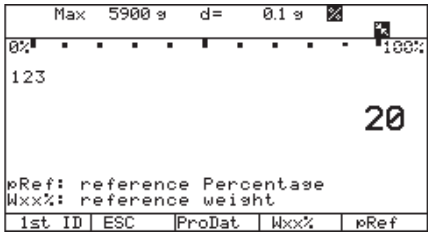
Example: 100% of a sample material should be weighed.

Configuration: The “Weighing in percent” application is selected, and printout has been set up.

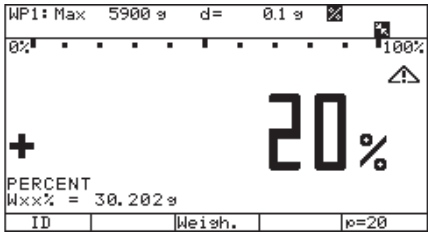
- Place empty container on the scale.
- Press the $\rightarrow T \leftarrow$ key to tare the scale.
Note: If the automatic tare function is enabled (see chapter “Operation” in the “Weighing” section), you do not need to press the $\rightarrow T \leftarrow$ key. The tare weight is saved automatically when you place the container on the platform.

- Add the reference material to the container in accordance with the defined reference percentage value (in this example, 20% = 30 g).

Weighing in Percent%

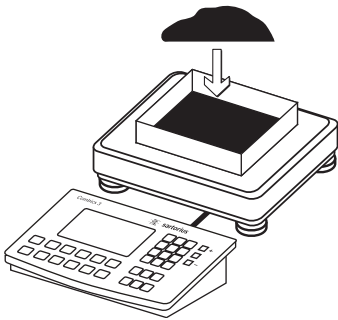


- ▶ Enter the reference percentage “pRef” using the keypad.
- ▶ Press the “pRef” soft key to start the calculation of the reference weight “Wxx%.”

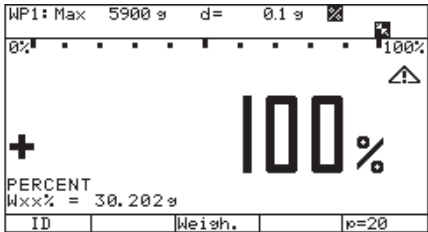


- ▶ The calculation is based on the active net weight value and the reference percentage value entered. The reference weight “Wxx%” is displayed in the bottom left.

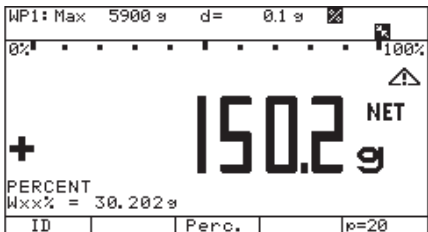
Note: If the weight is too light, an error code is shown in the main display “INF 29”. If this is the case, set the minimum load to a smaller number of digits.



- ▶ Add additional material until the reference percentage value has been reached (in this example, 100% = 150 g).



- ▶ Keep filling until 100% is displayed.
- ▶ Press the “Weighing” soft key.



- ▶ The net weight is displayed.
- ▶ Press the (F) key to print the results (to configure printouts, see “Configuring Printouts”).

Note: If automatic printout of results is enabled, you do not need to press the (F) key. The results are printed automatically.

pRef	+	20 %
wRef	+	30.202 g
G#	+	254.000 g
T	+	103.800 g
N	+	150.200 g
Prc	+	100 %

Checkweighing %

With the Checkweighing application, you can check whether the sample on the weighing platform matches a target value or lies within a given tolerance range. Checkweighing also makes it easy to fill sample materials to a specified target weight.

Characteristics

- Enter the nominal or target weight (set point) and the tolerance range delimiters either using the keypad or by saving the weight value of a load on the platform.
- Enter the tolerance limits as absolute values (Min and Max) or as percentages of the target. Configured in the menu under:
Application 2:
Checkweighing: Type
of checkweighing input
- Results are shown on the main display, in the bar graph and via colored LEDs as well as sent to control output ports for further processing.
- Toggle the main display between the weight value and the tolerance limits by pressing the **LLHH** and **Weight** soft keys. For the limit value, if the weight in the readout is outside the tolerance range, "LL" (too low) or "HH" (too high) is displayed
- Activate info mode by pressing **←07** (> 2 sec)
- Automatic printout configured in Setup under:
Application 2:
Checkweighing: Auto
printout of results
- Automatic taring of container weight
Configured in Setup under:
Application
parameters: Autotare
1st weight
- Automatic initialization when you switch on the Combics with most recently saved application data.
Configured in Setup under:
Application
parameters:
Checkweighing:
Autostart app when
power is on

- Exit application, delete parameters:
You can assign different functions to the **CF** key for deleting applications. When you clear applications, you can delete either the data stored for all applications or just selected data stored for the active application. Configured in Setup under:
Application
parameters:
CF function in
applications
- Restore factory default settings.
Configured in Setup under:
Application
parameters:
Factory settings

Soft Key Functions

Start	Begin input of target and tolerance values
Param.	Enter new target and tolerance values
LLHH	Toggle the display from weight to tolerance limits
Weight	Toggle the display from tolerance limit to weight readout During initialization: Save the current weight value displayed as a target or tolerance limit value

Checkweighing entails comparing the current weight value to a defined target. You can enter the value for this target using the keypad, or by saving the weight value indicated. You can also define upper and lower tolerance limits based on this target. You can do this by:

- Entering absolute values using the keypad or placing the desired amount of weight on the platform and saving the value, or
- by entering each value as a percentage of the target weight

The initialization data remains valid until deleted by pressing the **CF** key or until overwritten by a new value. It also remains saved after you turn off the Combics 3.

Checkweighing $\frac{1}{2}$

Preparation

- Select Setup: Press the **[Setup]** key
- Select Application Parameters:
Press the \rightarrow soft key
- Select the Checkweighing application:
Press the \rightarrow soft key

Application 2: Checkweighing

- Checkweighing range
 - o 30% to 170%
 - 10% to max. load
- <SET> control output
 - o ,SET* control signal
 - Ready to operate (for process control systems)
- Activation of port lines
 - Off
 - Always on
 - At stability
 - o Within checkweighing range
 - At stability within checkweighing range
- Type of checkweighing input
 - o Target, min, max, weight
 - Target, min in %, max in %
 - Target, min., max.-Tolerance
- Auto printout of results
 - o Off
 - On
 - Only OK values
 - Only nonconforming values

Application parameters

- Autotare 1st weight
 - o Off
 - On
- Min. load f. auto. taring/printout
 - 1 digit
 - 2 digits
 - 5 digits
 - o 10 digits
 - 20 digits
 - 50 digits
 - 100 digits
 - 200 digits
 - 500 digits
 - 1000 digits
- Autostart app when power is on
 - On
 - o Off
- CF function in applications ¹⁾
 - o Clears all applications
 - Clear only selected applications
- Factory setting Application only
 - Yes
 - o No

o = Factory setting

¹⁾ For option I2 only

- To save settings and exit the Setup menu: Press the **[Setup]** key or the $\leftarrow \leftarrow$ soft key

Minimum Load

The minimum load required for automatic taring of the container weight on the platform (first weight), or for automatic printout of results, is configured in Setup under:

Application parameters: Min. load f. auto. taring/printout

You can choose from the following 10 levels for this setting:

- 1 digit (no minimum load)
- 2 digits
- 5 digits
- 10 digits
- 20 digits
- 50 digits
- 100 digits
- 200 digits
- 500 digits
- 1000 digits

The “digits” here refer to the scale intervals in the connected weighing platform. If the interval of the connected platform is 1 g, for example, and 1000 digits are required, you must place at least 1000 g (= >1000 intervals = 1000 digits) on the weighing platform to activate autotaring or autoprnt.

Target

Checkweighing entails comparing the current weight value to a defined target. You can enter the value for this target using the keypad, or by saving the weight value indicated. You can also define upper and lower tolerance limits based on this target. You can do this by:

- Entering absolute values using the keypad or placing the desired amount of weight on the platform and saving the value or
- by entering each value as a percentage deviation of the target weight or
- by entering a relative weight deviation from the target weight via the keypad.

The value remains valid until deleted by pressing the **[CF]** key or until overwritten by a new value. It remains saved after the scale is switched off.

Display

The result of a measurement is shown either as a weight value or in relation to the target.

- Weight display

The measured value line always shows the weight value, even if it lies outside the tolerance range.

The bar graph is displayed with symbols indicating lower limit, target and upper limit. Weights are shown logarithmically up to the lower tolerance limit, and linearly beyond that point.

The LEDs are activated as follows:

Yellow: weight value > upper tolerance limit

Green: weight value is within OK range

Red: weight value < lower tolerance limit

If no LED is lit:

- the application is not completely initialized or
- the weight value is outside the checkweighing range. The limits of the checkweighing range are configured in Setup under:
Application 2: Checkweighing: Checkweighing range
- The weighing platform has not stabilized

- Relation to target value

As “Weight display” above, with the exception that:

- **LL** appears in the main display if the weight value is less than the lower limit
- **HH** appears on the main display if the weight value is higher than the upper limit

Digital Input/Output Interface

The Checkweighing application supports the digital input/output-interface. There are 4 control lines, or outputs, which are activated as follows (see also the diagram below):

- Lighter
- Equal
- Heavier
- Set

In the Setup menu:

Application 2:

Checkweighing:

Activation of port lines

you can define whether these control ports are

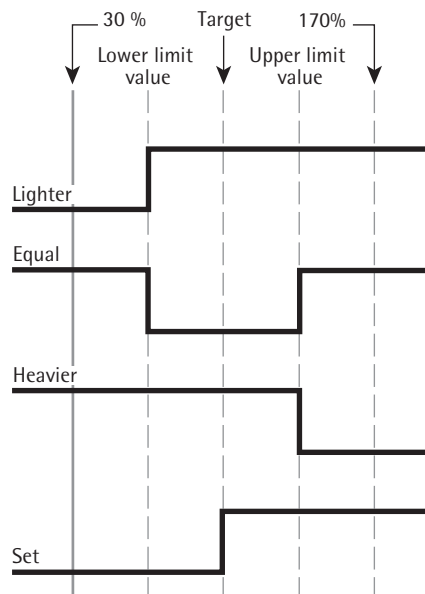
- switched off
- always on
- on at stability
- on within checkweighing range
- on at stability within checkweighing range

The "SET" output normally changes its voltage level when the load is near the target weight. Alternatively, you can assign the "Ready for use" function to this port. Configured in Setup under: **Application 2: Checkweighing: <SET> control output**

This makes it possible, for example, to connect a simple indicator for weighing or calculation results, similar to the 3 LEDs on the Combics 3 indicator.

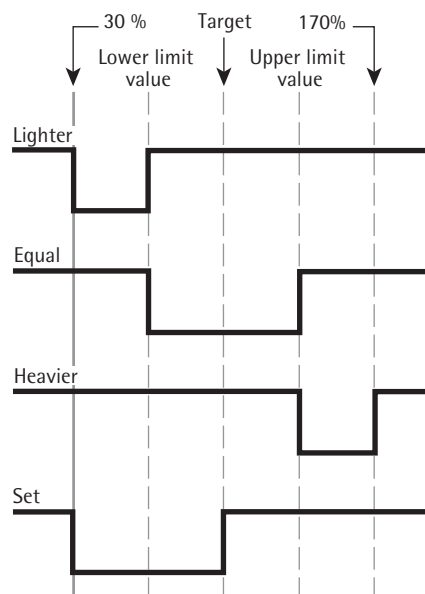
All data output ports have a high voltage level when:

- The application has not been initialized
- The weighing instrument is not at stability and the "at stability ..." parameter is selected
- The weigh is not within checkweighing range



Digital Input/Output Interface

- <SET> control output set
- Port lines: always on



Digital Input/Output Interface

- <SET> control output set
- Port lines: within checkweighing range

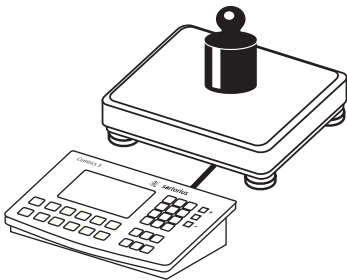
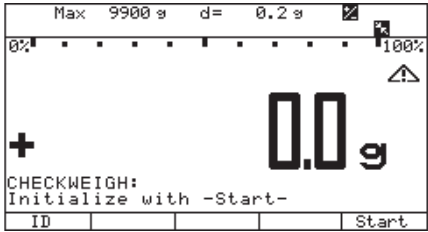
Output port specifications:

- When not in use, the voltage level is high: $>3.7\text{ V}/+4\text{ mA}$
- When activated, the voltage level is low: $<0.4\text{ V}/-4\text{ mA}$

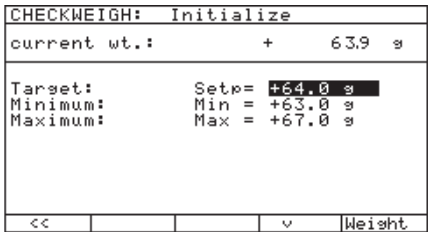
⚠ The data outputs are not protected from short circuits.

Checkweighing +/-

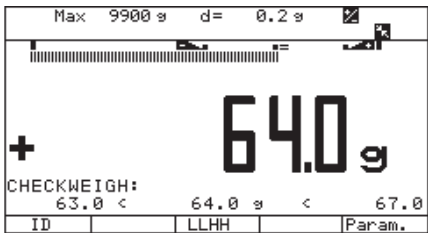
Example 1: Checkweighing samples with a target weight of 64 g and a tolerance range from -1 g to +3 g. The tolerance values should be entered as absolute values (lower and upper tolerance limit). Configuration: The “Weighing” application and the “Checkweighing” application with the setting “...Type of checkweighing input: Target, min, max, weight” is selected, a printout has been set up.



- Place a sample with the target weight (in this example, 64 g) on the platform.
- Press the “Start” soft key.



- The input window opens.
- Press the “Weight” soft key to apply the weight as the target.
- Press the “↓” soft key to save the entry.
- The next line is selected.
- Enter the value for the lower limit “Min” via the keypad.
- Press the “↓” soft key to save the entry.
- The next line is selected.
- Enter the minimum value “Min” via the keypad (in this example, 63 g).
- Press the “↓” soft key to save the entry.
- Enter the value for the upper limit (in this example, 67 g)
- Press the “↓” soft key to save the entry.
- The input window closes.
- Because the sample with the target weight is still on the weighing platform, the weight is shown on the display with the checkweighing bars. The green LED indicates a value in the target range.
- Remove the sample with the target weight from the platform.
- The samples can now be placed on the platform and checked one after the other.
- The LEDs next to the display indicate the results:
 - yellow LED: sample too heavy
 - green LED: sample in tolerance range
 - red LED: sample too light



- Press the (Print) key to print the results (to configure printouts see “Data Interfaces”, section “Configuring Printouts”).

Setp + 64.0 g
Min + 63.0 g
Max + 67.0 g

G# + 64.0 g
T + 0.00 g
N + 64.0 g

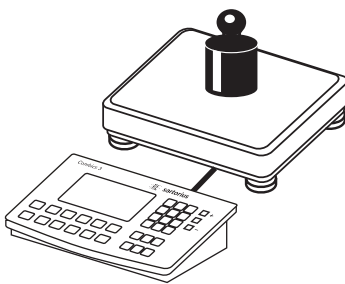
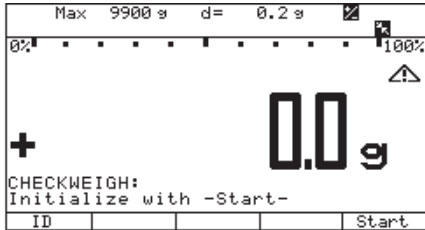
Lim + 0.00 %
W.Diff+ 0.00 %
.....

Target
Minimum
Maximum


Gross weight
Tare weight
Net weight

Percentage of lower deviation from target
Percentage of upper deviation from target

Example 2: Checkweighing samples with a target weight of 64 g and a tolerance range from -1 g to +3 g. The tolerance values should be entered as a relative deviation from the target value.
 Configuration: The “Checkweighing” application with the setting “...Type of checkweighing input: Target, min.-, max.-Tolerance” is selected, a printout has been set up.



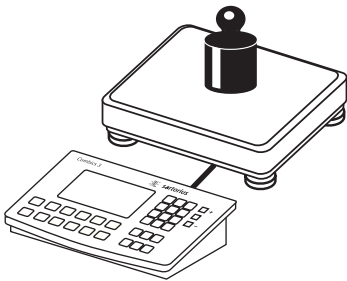
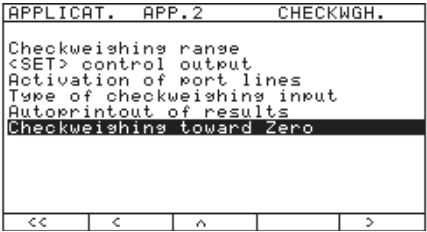
CHECKWEIGH: Initialize			
current wt.:	+	63.9 g	
Target:	Setp=	+64.0 g	
Tolerance -:	Tol-=	+1.0 g	
Tolerance +:	Tol+=	+3.0 g	
<<			Weight

- ▶ Place a sample with the target weight (in this example, 64 g) on the platform.
 - ▶ Press the “Start” soft key.
-
- ▷ The input window opens.
 - ▶ Press the “Weight” soft key to apply the weight as the target.
 - ▶ Press the “↓” soft key to save the entry.
 - ▷ The next line is selected.
 - ▶ Enter the value for the lower limit “Min” via the keypad.
 - ▶ Press the “↓” soft key to save the entry.
 - ▷ The next line is selected.
 - ▶ Enter the minimum tolerance “Tol-” via the keypad (in this example, 1 g).
 - ▶ Press the “↓” soft key to save the entry.
 - ▶ Enter the maximum tolerance “Tol+” via the keypad (in this example, 3 g).
 - ▶ Press the “↓” soft key to save the entry.
 - ▷ The input window closes.
 - ▷ Because the sample with the target weight is still on the weighing platform, the weight is shown on the display with the checkweighing bars. The green LED indicates a value in the target range.
 - ▶ Remove the sample with the target weight from the platform.
 - ▶ The samples can now be placed on the platform and checked one after the other.
 - ▷ The LEDs next to the display indicate the results:
 - yellow LED: sample too heavy
 - green LED: sample in tolerance range
 - red LED: sample too light
 - ▶ Press the  key to print the results (to configure printouts see “Data Interfaces”, section “Configuring Printouts”).

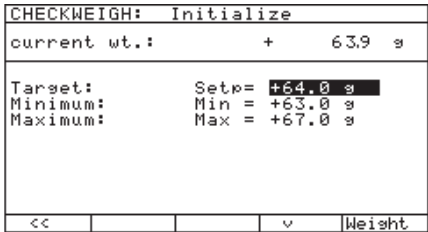
Checkweighing $\frac{1}{2}$

Example 3: Checkweighing toward zero $\frac{1}{2}$.

Checkweighing samples with a target weight of 64 g and a tolerance range from -1 g to +3 g. The tolerance values should be entered as absolute values (lower and upper tolerance limit). Configuration: The "Checkweighing toward zero" application with the setting "...Type of checkweighing input: Target, min, max, weight" is selected, a printout has been set up.

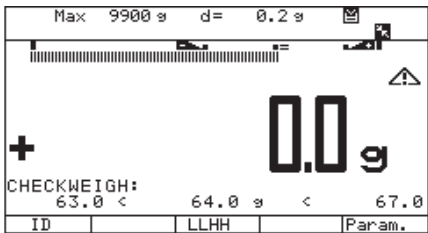


- Place a sample with the target weight (in this example, 64 g) on the platform.
- Press the "Start" soft key.



- The input window opens.
- Press the "Weight" soft key to apply the weight as the target.
- Press the "↓" soft key to save the entry.
- The next line is selected.
- Enter the value for the lower limit "Min" via the keypad.
- Press the "↓" soft key to save the entry.
- The next line is selected.
- Enter the minimum value "Min" via the keypad (in this example, 63 g).
- Press the "↓" soft key to save the entry.
- Enter the value for the upper limit (in this example, 67 kg)
- Press the "↓" soft key to save the entry.
- The input window closes.
- Because the sample with the target weight is still on the weighing platform, the weight is shown on the display with the checkweighing bars. The green LED indicates a value in the target range.
- Remove the sample with the target weight from the platform.
- The samples can now be placed on the platform and checked one after the other.
- The LEDs next to the display indicate the results:
 - yellow LED: sample too heavy
 - green LED: sample in tolerance range
 - red LED: sample too light
- Press the (E) key to print the results (to configure printouts, see "Configuring Printouts").


Note: If automatic printout of results is enabled, you do not need to press the (E) key. The results are printed automatically.




Classification

With the Classification application, you can determine whether the weight of a given sample lies within the limits of a defined weight class.

Characteristics

- Classification with 3 or 5 weight classes.
Configured in Setup under:
Application 2:
Classification:
Number of classes
- Enter the upper class limits using the keypad or by saving weight values from a load on the platform
- Enter the upper limits of weight classes as absolute values or as a percentage of deviation from the upper limit of Class 1
Configured in the menu under:
Application 2:
Classification:
Parameter input
- Class of current weight also indicated by 1 LED (when using 3 classes) or 1 or 2 LEDs (when using 5 classes)
- Activate info mode by pressing  (> 2 sec)
- Toggle the main display between classes and weights by pressing the **Net** soft key and the **Class** soft key
- Automatic printout configured in Setup under:
Application 2:
Classification: **Auto printout of results**
- Automatic taring of container weight
Configured in Setup under:
Application parameters:
Autotare 1st weight
- Automatic initialization when you switch on the scale with most recently saved application data. Configured in Setup under:
Application parameters: **Autostart app when power is on**

- Exit application, delete parameters:
You can assign different functions to the  key for deleting applications. When you clear applications, you can delete either the data stored for all applications or just selected data stored for the active application. Configured in Setup under:
Application:
CF function in applications
- Restore factory default settings.
Configured in Setup under:
Application parameters:
Factory settings


Soft Key Functions

Start	Begin first initialization
Param.	Begin new initialization
Net	Toggle from class to weight display
Class	Toggle the display from weight to class display
Weight	For initialization: Save the current weight value as the upper limit of weight class

To use the Classification application, you need to enter the delimiters that separate one class from another.

Limits between the individual weight classes are required for the classification. The lower limit of Class 1 is defined by the preset minimum load. The other classes are configured by defining their upper limits. There are two ways to enter the delimiters for classes 1 through 3 (or 5):

- By saving the weight value indicated:
Each upper limit value, with the exception of the highest class, is entered using the keypad or by saving the weight value of a load on the weighing platform.
- By entering a percentage:
The upper value of Class 1 is entered using the keypad or by saving the value indicated. Upper limits for the other classes are defined by entering a percentage of deviation from the upper limit of Class 1, using the keypad. Example: Enter 100 g as the upper limit of Class 1. Then enter 15 >%. When working with 3 classes, this yields the following weight classes:
Class 0: up to the minimum load
Class 1: >minimum load - 100 g
Class 2: >100 g - 115 g
Class 3: >115 g - maximum load
When working with 5 classes, this yields the following weight classes:
Class 0: up to the minimum load
Class 1: >minimum load - 100 g
Class 2: >100 g - 115 g
Class 3: >115 g - 130 g
Class 4: >130 g - 145 g
Class 5: >145 g - maximum load

The initialization data remains valid until deleted by pressing the  key or until overwritten by a new value. It also remains saved after you turn off the CombiCS 3.

Classification

Preparation

- Select Setup: Press the **[Setup]** key
- Select Application Parameters:
Press the **>** soft key
- Select the Classification application:
Press the **>** soft key

Application 2: Classification

Min. load for class 1 lower limit

- o 1 digit
- 2 digits
- 5 digits
- 10 digits
- 20 digits
- 50 digits
- 100 digits
- 200 digits
- 500 digits
- 1000 digits

<SET> control output

- o „SET“ control signal
- Ready to operate (for process control systems)

Activation of port lines

- Off
- Always on
- o At stability

Number of classes

- o 3 classes
- 5 classes

Parameter input

- o Weight values
- Percentage

Auto printout of results

- o Off
- On

Application parameters

Autotare 1st weight

- o Off
- On

Min. load f. auto. taring/printout

- 1 digit
- 2 digits
- 5 digits
- o 10 digits
- 20 digits
- 50 digits
- 100 digits
- 200 digits
- 500 digits
- 1000 digits

Autostart app when power is on

- On
- o Off

CF function in applications ¹⁾

- o Clears all applications
- Clear only selected applications

Factory settings: Application parameters only

- Yes
- o No

o = Factory setting

¹⁾ For option 12 only

- To save settings and exit the Setup menu: Press the **[Setup]** key or the **<<** soft key

Minimum Load

The minimum load for the first class is configured in Setup under:

**Application 2:
Classification: Min.
load for class 1 lower
limit**

Once the limit is exceeded by the load, initialization can begin.

Once the application is initialized, a weight value below the minimum load is designated Class >0; no class is displayed.

The minimum load required for automatic taring of the container weight on the platform (first weight), or for automatic printout of results, is configured in Setup under:

**Application
parameters:
Min. load f. auto.
taring/printout**

You can choose from the following 10 levels for this setting:

- 1 digit
- 2 digits
- 5 digits
- 10 digits
- 20 digits
- 50 digits
- 100 digits
- 200 digits
- 500 digits
- 1000 digits

The “digits” here refer to the scale intervals in the connected weighing platform. If the interval of the connected platform is 1 g, for example, and 1000 digits are required, you must place at least 1000 g (= >1000 intervals =1000 digits) on the weighing platform for the first class to activate autotaring or autoprint.

Display

The result of a given measurement is shown as either a weight value or a class number.

- Weight display:
The current weight is shown in the measured value line and the current class in the text line. Additionally, the LEDs are lit as follows:

With 3 classes:

- Class 1: red LED
- Class 2: green LED
- Class 3: yellow LED

With 5 classes:

- Class 1: red LED
- Class 2: red and green LEDs
- Class 3: green LED
- Class 4: green and yellow LEDs
- Class 5: yellow LED

- Display of classes:
The current class is shown in the measured value line, and the current weight in the text line. Additionally, the LEDs are lit as described above.

Digital Input/Output Interface

The Classification application supports the digital input/output-interface. There are 4 control lines, or outputs, which are activated as follows (see also the diagram below):

- With 3 classes:
 - Class 1
 - Class 2
 - Class 3
 - Set
- With five classes:
 - Classes 1/2
 - Classes 2/3/4
 - Classes 4/5
 - Set

In the Setup menu:

Application 1:
Classification:
Activation of port
lines

you can define whether these control ports are

- switched off
- always on
- on at stability

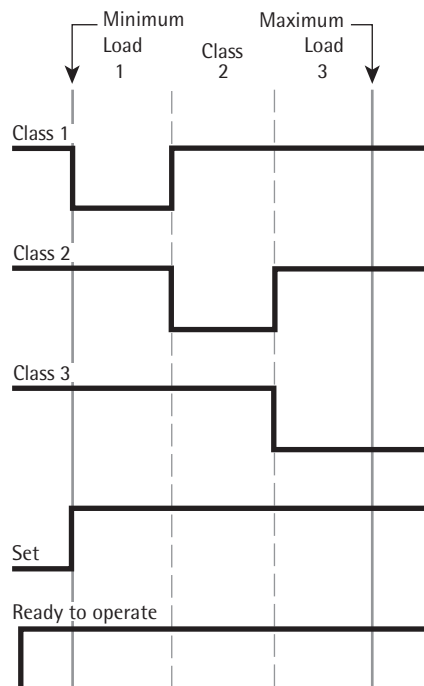
The "SET" output normally changes its voltage level when the current weight exceeds the minimum load. Alternatively, you can assign the "Ready for use" function to this port. Configured in Setup under:

Application 1:
Classification: <
SET< control output

Acoustic signal

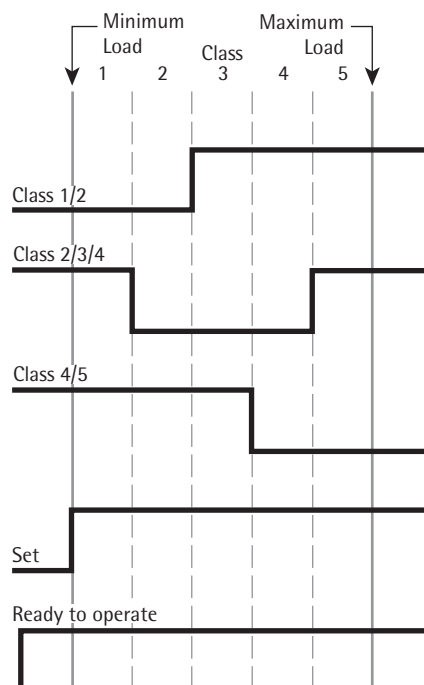
An acoustic signal can be activated in addition to the green LED.

The acoustic signal can be linked to the green LED in the Setup menu
"Device parameters:
Operating parameters:
Acoustic signal:
 Linked to the green LED."



Digital Input/Output Interface

Control lines when working with 3 classes:

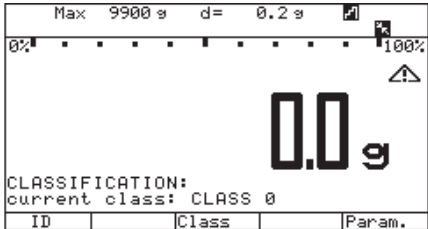


Digital Input/Output Interface
 Control lines when working with 5 classes

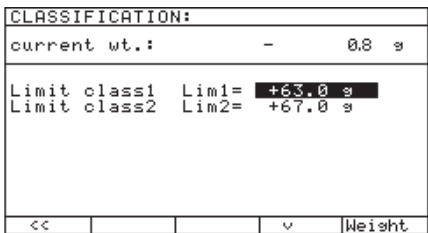
Classification

Example: There should be three classes.
Configuration: The “Weighing” application and the “Checkweighing” application with the setting “...Number of classes: 03 classes” is selected, a printout has been set up.

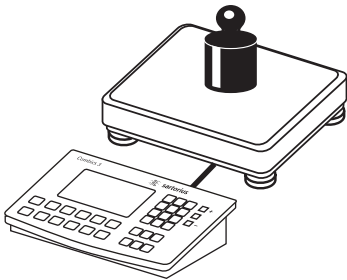
► Press the “Param.” soft key.





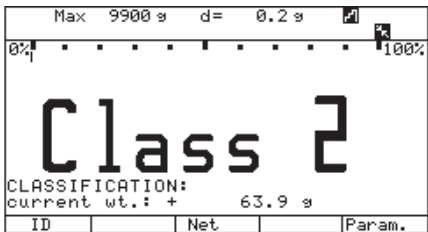
- The input window opens.
- Enter the upper limit for Class 1 using the keypad (in this example, 63 g).
- Enter the upper limit for Class 2 using the keypad (in this example, 67 g).
- Press the “<<” soft key to close the input window and save the entry.



► Place the sample on the scale.



- The result is displayed.
- Press the  key to print the results (to configure printouts, see “Configuring Printouts”).
Note: If automatic printout of results is enabled, you do not need to press the  key.
The results are printed automatically.



Lim1 + 63.0 g
Lim2 + 67.0 g


G# + 63.9 g
T + 0.0 g
N + 63.9 g


Class 2
.....

Totalizing Σ

With the Totalizing application, you can add weight values to the totalizing memory. In addition to weight values, the number of separate values added to memory is also saved (transaction counter).

Characteristics

- Totalize up to 999 individual weights
- Simultaneous saving of net values and calculated values (if available). Configured in Setup under:
Application 3:
Totalizing:
Evaluated values
- Save weight values and calculated values from either Application 1 (for example, Counting, Weighing in Percent) or Application 2 (Checkweighing). Configured in Setup under:
Application 3:
Totalizing:
Evaluated values
- Current transaction number displayed in the text line (indicating the transactions already added)
- Weighing in up to a defined target, with the totalization memory content + current weight displayed in the text lines
- Save weight values manually or automatically
- Accurate calculation of total of weight values from two weighing platforms
- Activate info mode by pressing  (> 2 sec)
- Automatic printout when value saved

- Automatic taring of container weight
Configured in Setup under:
Application
parameters: Autotare
1st weight
- Incomplete totalizing routines saved in battery-backed memory after CombiCS 3 is switched off. Configured in Setup under:
Application
parameters: Autostart
app when power is on
- Exit application, delete parameters:
You can assign different functions to the  key for deleting applications. When you clear applications, you can delete either the data stored for all applications or just selected data stored for the active application. Configured in Setup under:
Application
parameters:
CF function in
applications
- Restore factory default settings.
Configured in Setup under:
Application
parameters:
Factory settings


Soft Key Functions

- M+** Add net value from active platform to totalizing memory

A totalizing memory is available for adding individual net and gross values. Weight values can be saved to the totalizing memory either manually or automatically. Configured in Setup under:
Application 3:
Totalizing: Autosave
mode

- Save value manually by pressing **M+**
The value taken from the active platform is added to the value already saved in totalization memory and the transaction counter value is increased by one. When a value is added manually, the program does not check whether the platform has been unloaded since the last time the **M+** soft key was pressed.
- Value saved automatically when the weighing platform is stable and the defined minimum load is exceeded. If the defined minimum load is not exceeded, you can save the item manually by pressing the **M+** soft key. Regardless of these settings, the current value cannot be saved automatically unless the platform is unloaded before the next sample is placed on it. The weighing platform is considered to be unloaded when the load is less than 50% of the minimum load.

The number of items added to memory is displayed in the text line.

Press the  key to clear the totalizing memory. A printout is automatically generated.

With 2 weighing platforms connected, you can add values from both platforms to the totalizing memory. The displayed result is accurately calculated in the active weight unit.
Example: When you add 1.243 kg (determined on a weighing platform with three decimal places) to 1.4 kg (determined on a platform with 1 decimal place), the display shows 2.643 kg.

Totalizing ∑

Preparation

- Select Setup: Press the **[Setup]** key
- Select Application Parameters:
Press the **→** soft key
- Select the Totalizing application:
Press the **→** soft key

- Application 3: Totalizing
 - Saved value
 - ☐ Net
 - ☐ Calculated
 - ☐ Net + calculated
 - Autosave mode
 - ☐ Off
 - ☐ On
 - Minimum load for autosave
 - ☐ 1 digit
 - ☐ 2 digits
 - ☐ 5 digits
 - ☐ 10 digits
 - ☐ 20 digits
 - ☐ 50 digits
 - ☐ 100 digits
 - ☐ 200 digits
 - ☐ 500 digits
 - ☐ 1000 digits
 - Source of data for autosave
 - ☐ Application 1
 - ☐ Application 2
 - Printout when saved
 - ☐ Off
 - ☐ Individual printout item
 - Evaluation mode, MR function ¹⁾
 - ☐ Intermediate evaluation
 - ☐ Final evaluation
 - Delete memory when product is changed
 - ☐ On
 - ☐ Off
 - Application parameters
 - Autotare 1st weight
 - ☐ Off
 - ☐ On
 - Min. load f. auto. taring/printout
 - ☐ 1 digit
 - ☐ 2 digits
 - ☐ 5 digits
 - ☐ 10 digits
 - ☐ 20 digits
 - ☐ 50 digits
 - ☐ 100 digits
 - ☐ 200 digits
 - ☐ 500 digits
 - ☐ 1000 digits
 - Autostart app when power is on
 - ☐ On
 - ☐ Off
 - CF function in applications ¹⁾
 - ☐ Clears all applications
 - ☐ Clear only selected applications
 - Factory setting Application only
 - ☐ Yes
 - ☐ No

o = Factory setting
 1) For option 12 only

- To save settings and exit the Setup menu: Press the **[Setup]** key or the **←** soft key

Minimum Load

The minimum load required for automatic taring of the container weight on the platform (first weight) is configured in Setup under:

**Application parameters:
 Min. load f. auto.
 taring/printout**

The minimum amount that a component must weigh before it can be saved in totalizing memory is configured in Setup under:

**Application 3:
 Totalizing: Minimum
 load for autosave**

You can choose from the following 10 levels for this setting:

1 digit
 2 digits
 5 digits
 10 digits
 20 digits
 50 digits
 100 digits
 200 digits
 500 digits
 1000 digits

The “digits” here refer to the scale intervals in the connected weighing platform. If the interval of the connected platform is 1 g, for example, and 1000 digits are required, you must place at least 1000 g (= 1000 intervals = 1000 digits) on the weighing platform for autotaring (only with the “Autotare 1st weight” option selected).

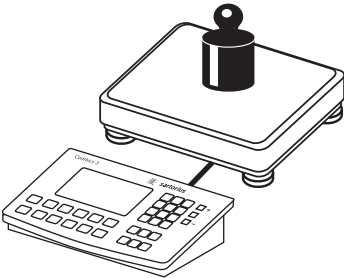
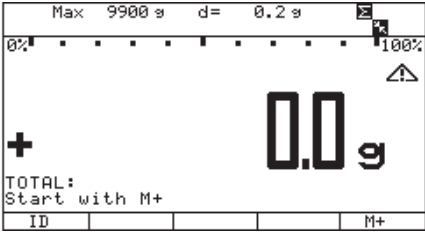
Printout

You can configure whether a printout is generated automatically when a weight value is stored in the totalizing memory or manually by pressing the “MR” soft key.

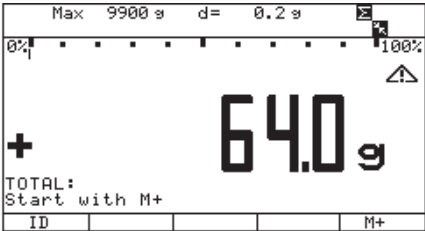
Set in “Application parameters: Application 3 (data records): Totalizing: Printout when saved and/or Evaluation mode, MR function.”

- Automatic printing: Component printout (individual printout of components)
 - Manual printout only by pressing the “MR” soft key: Intermediate evaluation
 - Manual printout only by pressing the “MR” soft key: Final evaluation and exiting Totalizing
- The total data record is printed when you clear the totalizing memory (by pressing the **[CF]** key).

Example: Totalizing weight values.
 Configuration: The “Weighing” and “Totalizing” application is selected, and a printout has been set up.
 Component printout set under “...Printout when saved: oPrint one component on request”
 Totalizing printout set under “...Evaluation mode, MR function: o Final evaluation, print”



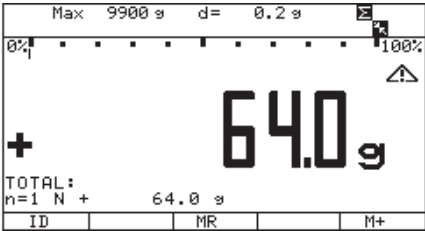
► Place the first weight on the weighing platform.



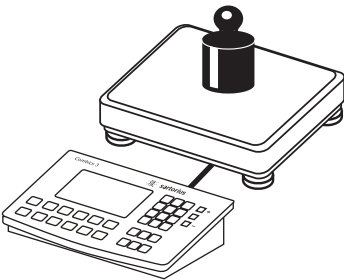
- The weight value is displayed.
- Press the “M+” soft key to save the first weight to the totalizing memory.

G#	+	0.064	kg
T	+	0.000	kg
N	+	0.064	kg
n		1	

► Item is printed automatically (**component printout**).

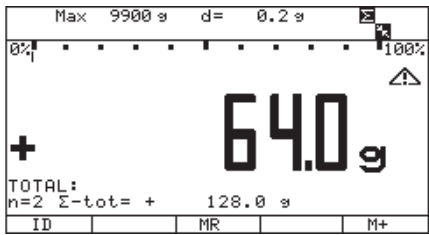


► The transaction counter “n” is increased by one (to 1).



► Remove the first weight from the weighing platform and place the second weight.

Totalizing Σ



G#	+	0.064	kg
T	+	0.000	kg
N	+	0.064	kg
n		2	

G#	+	0.128	kg
T	+	0.000	kg
N	+	0.128	kg
n		2	


- ▷ The weight value is displayed.
- ▶ Press the “M+” soft key to save the second weight to the totalizing memory.

- ▷ Item is printed automatically (**component printout**).
- ▶ Press the **CF** key or “MR” soft key (if previously selected in the menu) to exit Totalizing and delete the totalizing memory.
- ▷ Configured **total data record** is printed.

Net Total Formulation ↓

With this application, you can weigh in different components up to a defined total. Each component is saved in the net total memory.

Characteristics

- Weigh in up to 999 components in series
- Net total formulation cannot be combined with a level 1 or level 2 application
- Current component number displayed in the text lines (indicating the component to be added)
- Toggle the display between “component mode” and “additive mode” by pressing the **A-mode** and **C-mode** soft keys.
 - Component mode: Display the weight of the component currently on the platform (for 1 second after it is saved; then the platform is tared)
 - Additive mode: Display the weight of all components on the platform (after it is saved, the net weight of the last component added is displayed briefly)
- Toggle to a second weighing platform while weighing in
- Activate info mode by pressing  (> 2 sec)
- Automatic component printout when it is saved. Configured in Setup under:
Application 3:
Net total: Printout when saved
If the **Print one component on request** menu item is selected, the entire component record is printed. Standard printout configuration is printed. If the **Print components** menu item is selected, the following print items are generated only once for the first component:
blank line, date, time, ID1 through ID4, header lines 1 and 2. For subsequent components, each “component” print item (“Comp xx”) is followed by a blank line.

- Automatic taring of container weight
Configured in Setup under:

```
Application  
parameters:  
Autotare 1st weight
```

- Restore factory default settings.

```
Configured in Setup under:  
Application  
parameters:  
Factory settings
```

Soft Key Functions

M+ Save the component value to the Net total memory

A-mode Toggle to Additive mode

C-mode Toggle to Component mode

Net Total Formulation

Preparation

- Select Setup: Press the **[Setup]** key
- Select Application Parameters:
Press the **→** soft key
- Selecting the Net Total Formulation
Application: Press the **→** soft key

Application 3: Net total formulation

Minimum load for saving values

- o 1 digit
- 2 digits
- 5 digits
- 10 digits
- 20 digits
- 50 digits
- 100 digits
- 200 digits
- 500 digits
- 1000 digits

Printout when saved

- Off
- o Individual component printout
- Component printout

Application parameters

Autotare 1st weight

- Off
- o On

Min. load f. auto. taring/printout

- 1 digit
- 2 digits
- 5 digits
- o 10 digits
- 20 digits
- 50 digits
- 100 digits
- 200 digits
- 500 digits
- 1000 digits

Factory setting Application only

- Yes
- o No

o = Factory setting

- To save settings and exit the Setup menu: Press the **[Setup]** key or the **⏏** soft key

Minimum Load

The minimum amount that a component must weigh before it can be saved in net-total memory is configured in Setup under:

**Application 3:
Net total: Minimum
load for saving values**

Once the limit is exceeded by the load, the value can be saved. If the load on platform is too light, the following will occur when you try to save a value:

- Error code **Inf 29** appears
- A warning signal is emitted (double-beep)
- The weight is not saved

The minimum load required for automatic taring of the container weight on the platform (first weight) is configured in Setup under:

**Application
parameters:
Min. load f. auto.
taring/printout**

You can choose from the following 10 levels for this setting:

- 1 digit
- 2 digits
- 5 digits
- 10 digits
- 20 digits
- 50 digits
- 100 digits
- 200 digits
- 500 digits
- 1000 digits

The “digits” here refer to the scale intervals in the connected weighing platform. If the interval of the connected platform is 1 g, for example, and 1000 digits are required, you must place at least 1000 g (= >1000 intervals = 1000 digits) on the weighing platform for initialization.

Net Total Formulation with Two Weighing Platforms

This mode is used for weighing large and small components at the same time.

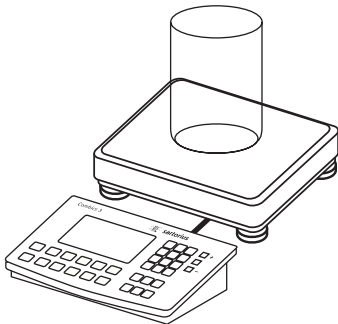
This makes it possible to toggle from the small-component platform to the large-component platform once during a measurement series. Once you toggle to the large-component platform, the **→0←** and **→T←** keys are available until a component is value is saved. For example, you can tare a partially-filled container taken from the small-component platform on the large component platform.


The value in component memory on the small-component platform is transferred to the large-component platform and the weight unit is converted, if necessary. The Component and Additive display modes are both available on the large-component platform.


The value read by the active platform is saved in component memory. The displayed result is accurately calculated in the active weight unit.

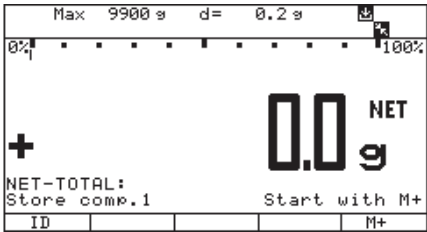
When you press **[CF]** to stop a measurement series the tare memories for both platforms are cleared, unless the large-component platform is an SBI instrument, in which case the platform is only tared.

Example: Three components of a formula should be weighed.
 Configuration: The “Net total formulation” application is selected, and printout has been set up.
 Set up component printout via “Device parameters:Config. printout:e.g. Printer 1: Comp.: Printout after saving val.”
 Set up total data record printout via “Device parameters: Config. printout:e.g. Printer 1: Total: Printout after pressing CF”



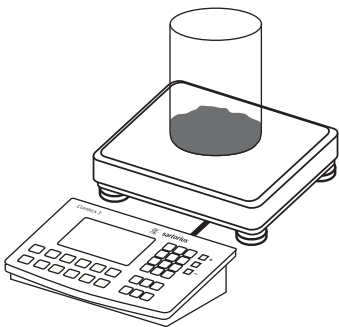
- ▶ Place empty container on the scale.
- ▶ Press the  key to tare the scale.

Note: If the automatic tare function is enabled, you do not need to press the  key. The tare weight is saved automatically when you place the container on the platform.



- ▶ The prompt to fill and save the first component is shown.

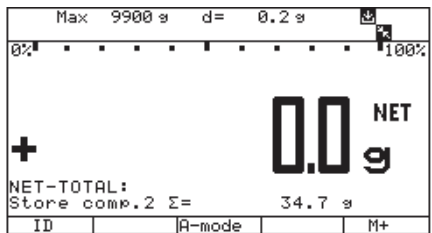
Net Total Formulation ↓



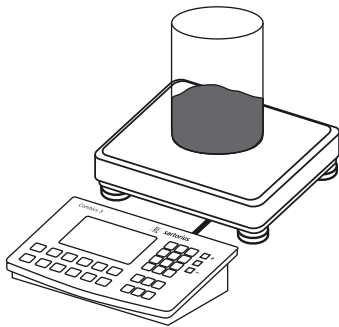
- Place the first component into the container (in this example, 34.7 g).



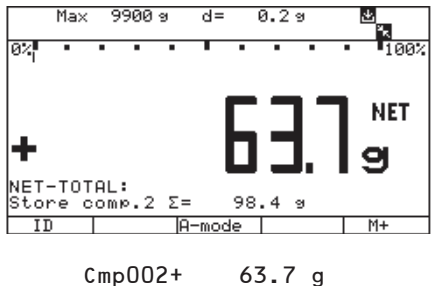
- ▷ The weight of the first component is displayed.
- Press the “M+” soft key to save the weight of the first component.



- ▷ The component printout is generated automatically.
- ▷ The weighing platform is tared and the component counter value is increased by one. The prompt to fill and save the second component is now displayed.

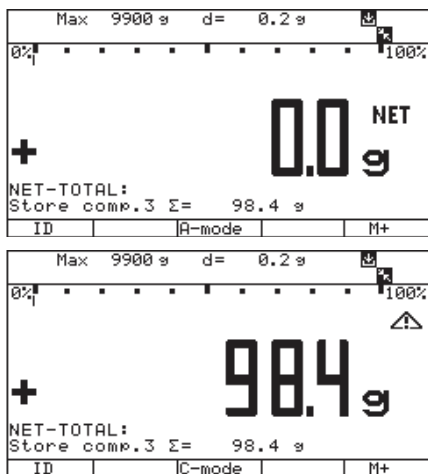


- Place the second component into the container (in this example, 63.7 g).



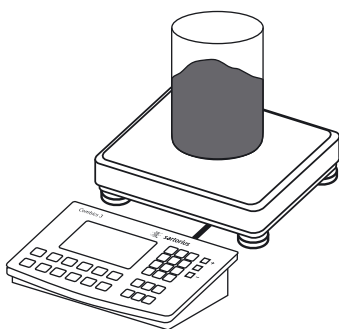
- ▷ The weight of the second component is displayed.
- Press the “M+” soft key to save the weight of the second component.

- ▷ The component printout is generated automatically.

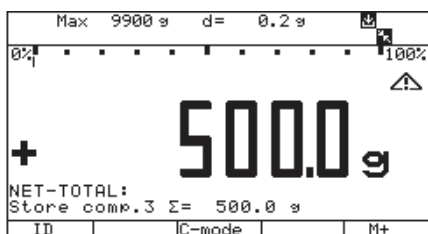


► The weighing platform is tared and the component counter value is increased by one. The prompt to fill and save the third component is now displayed.

► Press the “A-mode” soft key to display the total weight of the components weighed thus far.



► Place the third component into the container until the desired total weight is reached (in this example, 500 g).

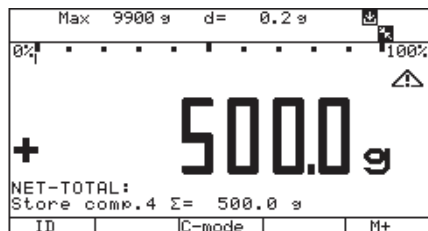


► The total weight is displayed.

► Press the “M+” soft key to save the weight of the third component.

Cmp003+ 401.6 g

► The component printout is generated automatically.



► The component counter value is increased by one. The prompt to fill and save the fourth component is now displayed.

► Press the **CF** key to complete the component weighing process.

► Results are printed automatically (configured total data record).

n + 3
Tot.cp+ 500.0 g
Cont.T+ 103.8 g

Number of components
Content of component memory
Content of tare memory (container weight)

.....

Product Data Memory

- Purpose The product data memory stores initialization data and user data (product and tare values).
- Characteristics
- The product data memory has capacity for a min. of 400 product values or a min. of 3800 tare values.
 - Each memory cell is uniquely identified by a name made up of alphanumeric characters.
 - The product data memory can be used with the following applications:

Application 1	Application 2
- Weighing	- Checkweighing
- Counting	- Classification
- Neutral measurement	
- Animal weighing	
- Weighing in percent	
 - Data records can be created, copied, changed, loaded, overwritten and individually deleted.
 - Data remains stored when the scale is switched off.

1st option:

- 2nd option:

- ```
MEMORY
Enter/Copy product
Change/Load product
Delete product
Enter/Copy tare memory
Change/Load tare memory
Delete tare memory

 allocated total
Products: 3/ 483 Memory
Tare: 1/ 3772 Memory

<< >
```

- | MEMORY | PRODUCT | ENTER |     |
|--------|---------|-------|-----|
| 2      |         |       |     |
| 678    |         |       |     |
| <      | COPY    | v     | New |

- | MEMORY | PRODUCT | ENTER |  |
|--------|---------|-------|--|
| Name:  |         |       |  |
| <      |         |       |  |

- |               |       |     |     |
|---------------|-------|-----|-----|
| PRODUCT       | "123" |     |     |
| current wt.:  | -     | 0.4 | g   |
| Product Info: |       |     |     |
| Ref. weight:  | wRef  | 0   | g   |
| Ref. value:   | nRef  | 20  | pcs |
| Ident1:       |       |     |     |
| Ident2:       |       |     |     |
| Ident3:       |       |     |     |
| Ident4:       |       |     |     |
| Tare name:    |       |     |     |

- |               |      |       |        |
|---------------|------|-------|--------|
| PRODUCT       |      | "123" |        |
| current wt.:  |      | -     | 0.2 g  |
| Product Info: |      |       |        |
| Ref. weight:  | wRef |       | 0.3 g  |
| Ref. value:   | nRef |       | 20 pcs |
| Ident1:       |      |       |        |
| Ident2:       |      |       |        |
| Ident3:       |      |       |        |
| Ident4:       |      |       |        |
| Tare name:    |      |       |        |

| MEMORY                                                                                                                                                                                                                                      |           |       |        |   |  |           |       |  |  |           |    |     |        |  |       |    |      |        |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------|--------|---|--|-----------|-------|--|--|-----------|----|-----|--------|--|-------|----|------|--------|--|
| Enter/Copy product                                                                                                                                                                                                                          |           |       |        |   |  |           |       |  |  |           |    |     |        |  |       |    |      |        |  |
| Change/Load product                                                                                                                                                                                                                         |           |       |        |   |  |           |       |  |  |           |    |     |        |  |       |    |      |        |  |
| Delete product                                                                                                                                                                                                                              |           |       |        |   |  |           |       |  |  |           |    |     |        |  |       |    |      |        |  |
| Enter/Copy tare memory                                                                                                                                                                                                                      |           |       |        |   |  |           |       |  |  |           |    |     |        |  |       |    |      |        |  |
| Change/Load tare memory                                                                                                                                                                                                                     |           |       |        |   |  |           |       |  |  |           |    |     |        |  |       |    |      |        |  |
| Delete tare memory                                                                                                                                                                                                                          |           |       |        |   |  |           |       |  |  |           |    |     |        |  |       |    |      |        |  |
| <table> <tr> <td></td><td>allocated</td><td>total</td><td></td><td></td></tr> <tr> <td>Products:</td><td>4/</td><td>483</td><td>Memory</td><td></td></tr> <tr> <td>Tare:</td><td>1/</td><td>3763</td><td>Memory</td><td></td></tr> </table> |           |       |        |   |  | allocated | total |  |  | Products: | 4/ | 483 | Memory |  | Tare: | 1/ | 3763 | Memory |  |
|                                                                                                                                                                                                                                             | allocated | total |        |   |  |           |       |  |  |           |    |     |        |  |       |    |      |        |  |
| Products:                                                                                                                                                                                                                                   | 4/        | 483   | Memory |   |  |           |       |  |  |           |    |     |        |  |       |    |      |        |  |
| Tare:                                                                                                                                                                                                                                       | 1/        | 3763  | Memory |   |  |           |       |  |  |           |    |     |        |  |       |    |      |        |  |
| <<                                                                                                                                                                                                                                          |           | ^     | v      | > |  |           |       |  |  |           |    |     |        |  |       |    |      |        |  |

### Copying Product Data

- ▶ Press the **Mem** key.
- ▷ The “**Memory**” menu will open and the first menu item is selected.
- ▶ Press the “**>**” soft key.
- ▷ The overview will open.
- ▶ Press the “**v**” soft key to select the desired product memory name.
- ▶ Press the “**Copy**” soft key.
- ▶ Enter the new name via the keypad and confirm using the “**↓**” soft key.
- ▶ Enter the product info via the keypad and confirm using the “**↓**” soft key.
- ▶ Press the “**<**” soft key to return to the overview.
- ▷ The newly created product memory name appears in the overview.
- ▶ Press the “**<**” soft key to return to the “**Memory**” menu.
- ▶ Press the “**v**” soft key to select the second line.
- ▶ Press the “**>**” soft key.
- ▶ Press the “**v**” soft key to select the copied product memory name.
- ▶ Press the “**Change**” soft key.
- ▶ Change the product values via the keypad and confirm using the “**↓**” soft key.
- ▶ Press the “**<**” soft key to return to the overview.
- ▶ Press the “**<**” soft key to return to the “**Memory**” menu.
- ▶ Press the “**<<**” soft key to exit the Product data memory menu.

### Changing Product Data

- ▶ Press the **Mem** key.
- ▷ The “**Memory**” menu will open and the first menu item is selected.
- ▶ Press the “**v**” soft key to select the second line.
- ▶ Press the “**>**” soft key.
- ▷ The overview will open.
- ▶ Press the “**v**” soft key to select the desired product memory name.
- ▶ Press the “**Change**” soft key.
- ▶ Change the product values via the keypad and confirm using the “**↓**” soft key.
- ▶ Press the “**<**” soft key to return to the overview.
- ▶ Press the “**<**” soft key to return to the “**Memory**” menu.
- ▶ Press the “**<<**” soft key to exit the Product data memory menu.

### Activating Saved Product Data

- ▶ Enter the memory name and press the **Mem** key.
- or
- ▶ Press the **Mem** key.
- ▷ The “**Memory**” menu will open and the first menu item is selected.
- ▶ Press the “**v**” soft key to select the second line.
- ▶ Press the “**>**” soft key.
- ▷ The overview will open.
- ▶ Press the “**v**” soft key to select the desired memory name.
- ▶ Press the “**Load**” soft key.
- ▷ The Product data memory menu will close automatically.



| MEMORY                  |    |      |        |  |
|-------------------------|----|------|--------|--|
| Enter/Copy product      |    |      |        |  |
| Change/Load product     |    |      |        |  |
| Delete product          |    |      |        |  |
| Enter/Copy tare memory  |    |      |        |  |
| Change/Load tare memory |    |      |        |  |
| Delete tare memory      |    |      |        |  |
| allocated total         |    |      |        |  |
| Products:               | 4/ | 403  | Memory |  |
| Tare:                   | 1/ | 3763 | Memory |  |
| <<      ^      v      > |    |      |        |  |

| MEMORY                   |  | PRODUCT | DELETE |  |
|--------------------------|--|---------|--------|--|
| 123                      |  |         |        |  |
| 2                        |  |         |        |  |
| 678                      |  |         |        |  |
| SCHRAUBE 1               |  |         |        |  |
| <   Del.All   ^   Delete |  |         |        |  |

| MEMORY       |  | PRODUCT | Delete? |  |
|--------------|--|---------|---------|--|
| 123          |  |         |         |  |
| 2            |  |         |         |  |
| 678          |  |         |         |  |
| SCHRAUBE 1   |  |         |         |  |
| <   No   Yes |  |         |         |  |

|                       |        |      |
|-----------------------|--------|------|
| Max 9900 g   d= 0.2 g |        |      |
| 0%   100%             |        |      |
| 2 PCS                 |        |      |
| COUNTING: 123         |        |      |
| wRef = 0.3000 g       |        |      |
| ID                    | Weigh. | n=20 |

| COUNTING: Info Mode |      |        |
|---------------------|------|--------|
| Ref. qty. :         | nRef | 20 pcs |
| Ref. weight :       | wRef | 0.3 g  |
| <<                > |      |        |

### Deleting Specific Memory Numbers

- ▶ Press the **Mem** key.
- ▶ The “Memory” menu will open and the first menu item is selected.
- ▶ Press the “v” soft key twice to select the third line.
- ▶ Press the “>” soft key.
- ▶ The overview will open.

- ▶ Press the “v” soft key to select the desired product memory name.
- ▶ Press the “Delete” soft key.

- ▶ The query window will open.
- ▶ Press the “No” soft key to not delete the memory name.
- ▶ Press the “Yes” soft key to delete the memory name.
- ▶ Press the “<” soft key to return to the overview.
- ▶ The deleted product memory name no longer appears in the overview.
- ▶ Press the “<” soft key to return to the “Memory” menu.
- ▶ Press the “<<” soft key to exit the Product data memory menu.

### Displaying Information for the Active Product Memory

- ▶ Activate the product memory, see “Activating Saved Product Data.”
- ▶ Press and hold the **On** key (min. 2 seconds).

- ▶ The Info mode will open:
- ▶ Press the “<<” soft key to exit the Info mode.

### Displaying Information for All Product Memory Data

- ▶ Press the **Mem** key.
- ▶ The “Memory” menu will open and the first menu item is selected.
- ▶ Press the “v” soft key.
- ▶ Press the “>” soft key.
- ▶ The overview will open.
- ▶ Press the “v” soft key to select the desired product memory name.
- ▶ Press the “Change” soft key.
- ▶ The product values will be displayed.
- ▶ Press the “<” soft key to return to the “Memory” menu.
- ▶ Press the “<<” soft key to exit the Product data memory menu.

**Example:** Using the Counting application with a stored average piece weight.  
Configuration: Application: Counting (COUNT.)

#### Saving the Average Piece Weight

- ▶ Start the application.
- ▶ Determine and save the average piece weight (wRef), see “Saving Product Data.”

#### Loading the Average Piece Weight or Reference Sample Quantity

- ▶ Enter the memory name and press the **[Mem]** key.
  - ▶ Press and hold the **[Fn]** key (min 2 seconds) to display wRef (average piece weight) and nRef (quantity) in Info mode.
- or
- ▶ Press the **[Mem]** key.
  - ▷ The “**Memory**” menu will open and the first menu item is selected.
  - ▶ Press the “**v**” soft key to select the second line.
  - ▶ Press the “**>**” soft key.
  - ▷ The overview will open.
  - ▶ Press the “**v**” soft key to select the desired memory name.
  - ▶ Press the “**Change**” soft key.
  - ▶ Press the “**>**” 2x and the “**<=<**” 1x to exit the Product Data Memory menu.

#### Overwriting Data in a Memory Cell

- ▶ Load the product memory cell to be overwritten (in this example, ,screw 123').

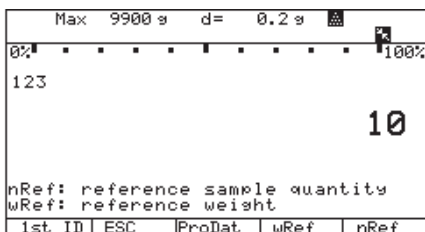
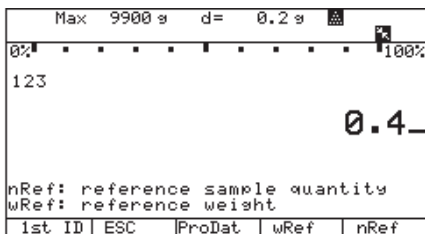
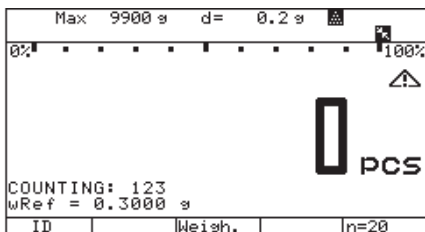
- ▶ For example, enter average piece weight wRef via the keypad.
- ▶ Press the “**wRef**” soft key to assign the value.
- ▶ Enter the name of the product memory cell to be overwritten, and press and hold the **[Mem]** key (min 2 seconds).
- ▷ The product memory is overwritten.

#### Changing the Average Piece Weight or Quantity without Overwriting the Product Memory

- ▶ Enter the memory name and press the **[Mem]** key to load the product memory.
- ▶ Enter the value via the keypad.
- ▶ Press the “**wRef**” or “**nRef**” soft key to assign the value.
- ▷ The changed value has not been overwritten in the active product memory.

To check:

- ▶ Press the **[Mem]** key.
- ▷ The “**Memory**” menu will open and the first menu item is selected.
- ▶ Press the “**v**” soft key to select the second line.
- ▶ Press the “**>**” soft key.
- ▷ The overview will open.
- ▶ Press the “**v**” soft key to select the desired memory name.
- ▶ Press the “**Change**” soft key.
- ▷ The value in the product data memory has not changed.



## Option I2: Combining Applications

The following table shows how the applications described can be combined.

Each row represents one combination. The basic weighing function is available at all times; it does not need to be combined with a computational function.

Select programs one after the other: Toggle using the  key

| Application 1 (Basic Function) | Application 2 (Monitoring Function) | Application 3 (Cumulative-value Function) |
|--------------------------------|-------------------------------------|-------------------------------------------|
| Counting                       | –                                   | Totalizing                                |
| Counting                       | Checkweighing                       | Totalizing                                |
| Counting                       | Checkweighing                       | –                                         |
| Counting                       | Classification                      | –                                         |
| Neutral measurement            | –                                   | Totalizing                                |
| Neutral measurement            | Checkweighing                       | Totalizing                                |
| Neutral measurement            | Checkweighing                       | –                                         |
| Neutral measurement            | Classification                      | –                                         |
| Animal weighing                | –                                   | Totalizing                                |
| Animal weighing                | Checkweighing                       | Totalizing                                |
| Animal weighing                | Checkweighing                       | –                                         |
| Animal weighing                | Classification                      | –                                         |
| Weighing in percent            | –                                   | Totalizing                                |
| Weighing in percent            | Checkweighing                       | Totalizing                                |
| Weighing in percent            | Checkweighing                       | –                                         |
| Weighing in percent            | Classification                      | –                                         |
| –                              | –                                   | Net total formulation                     |
| –                              | Checkweighing                       | Totalizing                                |

---

## Option I2: Examples of Application Combinations

**Example:** “Portioning” (counting  $\clubsuit$ , checkweighing  $\frac{\%}{\text{L}}$  with totalizing  $\Sigma$ )

Configuration:

Application 1: Counting “Counting”

Application 2: Checkweighing “Checkweighing”

Application 3: Totalizing “Totalizing”

Application 2 settings:

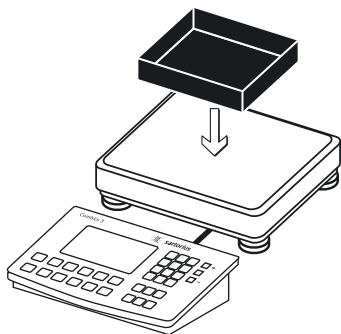
“...Type of checkweighing input:  
Target, min, max, weight”

Application 3 settings:

- “Save value: Net + calculated”
- “Autosave mode: yes”
- „Source of data for autosave: oApplication 2“
- “Printout when saved: oNo”

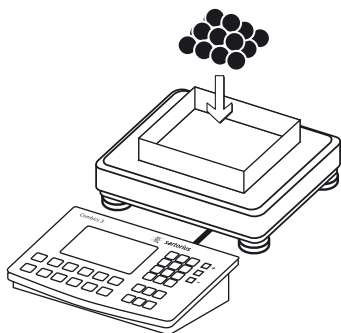
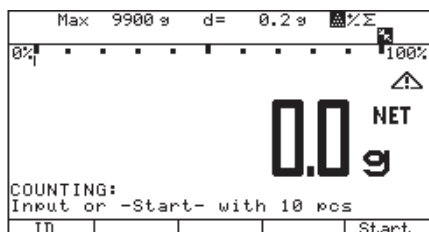
Setup menu settings:

- “Device parameters”: Specify interface and printer, see “Data Interfaces” section “Configuring the Data Interface as a Printer Port.”
- “Device parameters: Config. printout:  
for example, Printer 1: oTotal: Printout after pressing  
CF:G” and setup the print accordingly, see “Configuring Printouts.”

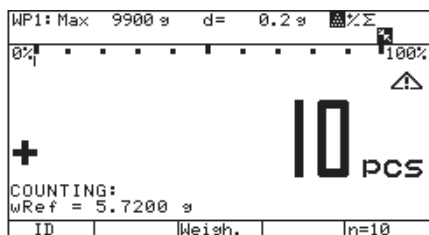


- Place empty container on the scale.
- Press the  $\rightarrow T \leftarrow$  key to tare the scale.

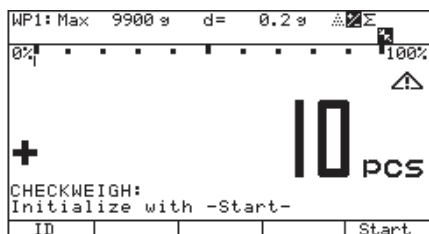
Note: If the automatic tare function is enabled (see chapter “Operation“ in the “Weighing“ section), you do not need to press the  $\rightarrow T \leftarrow$  key. The tare weight is saved automatically when you place the container on the platform.



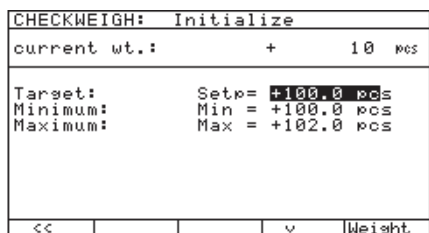
- Place a number of parts in the container for the reference quantity (in this example, 10 pcs).
- Press the  $\boxed{1} \boxed{0}$  keys to enter the number of reference parts via the keypad.
- Press the “nRef” soft key to start the calculation of the reference sample weight.



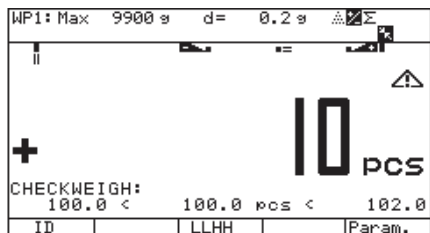
- The “wRef” reference weight is displayed in the bottom left.
- If the weight is too light, an error code is shown in the main display “INF 29.”  
Reduce the minimum load setting or increase the reference sample quantity setting and the number of parts in the container.
- Use the  $\boxed{\rightarrow 0 \leftarrow}$  key to toggle to “Checkweighing.”



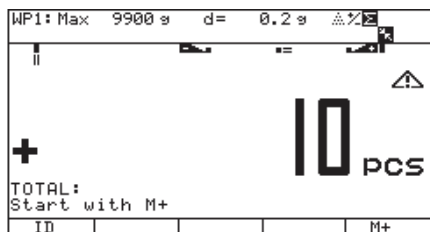
- the “%” symbol is selected in the top line.
- Press the “Start” soft key.



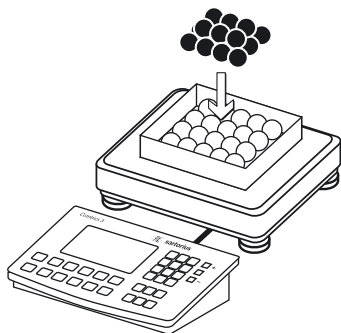
- Enter target value, minimum and maximum (in this example, target 100 pieces, minimum 100 pieces, maximum 102 pieces).



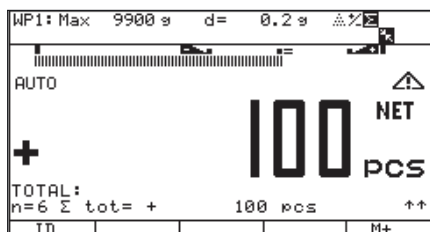
► Use the  $\Sigma$  key to toggle to “Totalizing.”



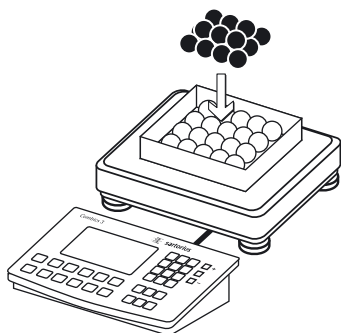
► the “ $\Sigma$ ” symbol is selected in the top line.



► Add desired number of pieces.



► The number of pieces is saved automatically.  
► Unload the scale: Remove the samples.



► Perform further counting operations as desired.  
► Press the “M+” soft key after each counting operation to save the partial amounts to the totalizing memory.  
► Use the  $\square$  key to end the portioning options and print the final evaluation.

```

nRef + 10 pcs
wRef + 5.7300 g
Setp + 100 pcs
Min + 100 pcs
Max + 102 pcs

n 3
*N + 1.730 g
Total + 302 pcs
.....

```

Configured printout: Total

# Configuring Printouts

## Purpose

You can configure individual printout formats for each application. Using the total data record for Totalizing and Net total formulation applications, you can define which parameters are printed using the **c** key.

In the “Config. printout” Setup menu, single, component and total data records can be configured, which contain the available print items for the respective applications. This should be carried out after setting the applications since some data in the printout is application-dependent.

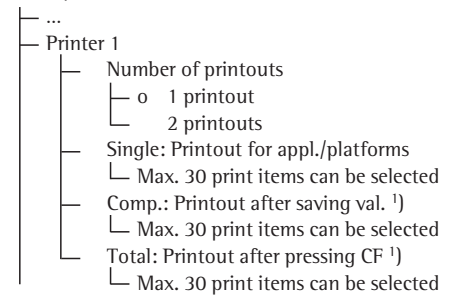
## Characteristics

- Quantity and extent of printout lists: 6 lists each with a max. length of 30 print items
  - Single printout Printer 1
  - Component printout Printer 1
  - Total data printout Printer 1
  - Single printout Printer 2
  - Component printout Printer 2
  - Total data printout Printer 2
- Single, component and total data records can be configured separately
- Print single printout:  
(**F**) key  
Auto printout of application when Setup menu is activated:
  - Animal weighing (averaging)
  - Checkweighing
  - Classification
- Print component printout:  
Totalizing/Net-total formulation with the **M+** soft key (Setup: Application 3: Totalizing: Printout: Component printout)
- Print totalizing printout:  
For selected application Totalizing/Net total formulation with the (**CF**) key
- When switching to another application in Setup, the printout lists are deleted. The new selection list is generated according to the active applications.
- Print items can be deleted individually
- Print items “Form Feed” for record footer:  
Move to the next label start for printer type: YDP01IS: “Label” and YDP04IS, setting “Label, manual form feed”
- ISO/GLP/GMP-compliant printout:  
The Setup menu configuration under “ISO/GMP-compliant printout” is also active for configured printouts.

## Preparation

- Select Setup: Press the (**Setup**) key
- Select Device parameters: Press the **➤** soft key
- Select Config. printout: Press the **➤** soft key

### Print protocol



o = Factory setting

1) = For Application 3 only:  
Totalizing and Net Total formulation

- To save settings and exit the Setup menu: Press the (**Setup**) key or the **◀◀** soft key

## Additional Functions

Printing the “Selection” and “List” Settings

- **LIST**: Print the currently selected list
- **SELECT**: Print currently selectable items

- When the selection bar is in **LIST** or **SELECT**:  
Press the (**F**) key

> Printout (example)

### INDIV.PRT LIST

```
=====
Net (N)
Gross (G#)
Tare
Tare (T2/PT2)
Piece count
=====
etc.
```

**Example:** Standard printout for data output from the “Counting” application

Configuration:

- Set the “Counting” application.
- Set up the printout for printer 1: “Indiv.: Printout f. app./weighing.”
- In the Setup menu, select “**Device parameters: Config.** printout: Printer 1: Indiv.: Printout f. app./weighing.”
- Use the “>” soft key to open the window and select the items for the printout.

| DEVICE                            | PRINTOUT | PRINTER 1 |
|-----------------------------------|----------|-----------|
| Number of printouts               |          |           |
| Indiv.: Printout f. app./weighing |          |           |
| Comp.: Printout after saving val. |          |           |
| Total: Printout after pressing CF |          |           |
| <<                                | <        | >         |

- Use the corresponding soft keys to select the lines on the right and move them to the left using the “↵” soft key.
- Use the “<” soft key to exit the menu item.
- Press the Setup key or the “<<” soft key to access the Weighing mode.
- Carry out weighing.
- Press the E key to print the results.

| LIST          | INDIV.PRT       | SELECTION |
|---------------|-----------------|-----------|
| Date/time     | Blank line      |           |
| GMP header    | -----           |           |
| Gross (G#)    | Form feed       |           |
| Header line 1 | Time            |           |
| Net (N)       | GMP footer      |           |
| -----         | Transaction no. |           |
|               | ID1             |           |
|               | ID2             |           |
|               | ID3             |           |
|               | ID4             |           |
| Delete        | <               | >         |

Printout example

```

nRef + 20 pcs
wRef + 5.7000 g
Qnt + 46 pcs

T + 103.8 g
N + 262.2 g

```



**Example:**  
Total data record for printout of the Counting, Checkweighing and Totalizing programs.

Settings (different from the factory settings):  
Setup: Application parameters: Application 1: Counting (Application 2): Checkweighing (Application 3): Totalizing  
To exit setup: << soft key  
Then access Setup again: Device Parameters: Config. printout: Printer 1: “Total: Printout after pressing CF”

Setup, “v” soft key 2x,  
“>” soft key

Select settings, confirm device parameters

| SETUP                | DEVICE |
|----------------------|--------|
| WP 1                 |        |
| WP 2                 |        |
| COM 1                |        |
| COM 2                |        |
| UniCOM               |        |
| Control I/O ports    |        |
| Bar code             |        |
| Config. printout     |        |
| Operating parameters |        |
| Clock                |        |
| <<                   | >      |

Press the “v” soft key  
several times, “>” soft key

Select printout and confirm

| SETUP                | DEVICE | PRINTOUT |
|----------------------|--------|----------|
| Headers              |        |          |
| ID codes             |        |          |
| ISO/GLP/GMP printout |        |          |
| Date/time            |        |          |
| Once at stability    |        |          |
| FlexPrint            |        |          |
| Printer 1            |        |          |

Press the “v” soft key  
several times, “>” soft key

Select printer 2 and confirm

| DEVICE                            | PRINTOUT | PRINTER 1 |
|-----------------------------------|----------|-----------|
| Number of printouts               |          |           |
| Indiv.: Printout f. app./weighing |          |           |
| Comp.: Printout after saving val. |          |           |
| Total: Printout after pressing CF |          |           |

“v” soft key 3x, “>” soft key

Select and confirm “Total: Printout after pressing CF”

| LIST          | INDIV.PRT       | SELECTION |
|---------------|-----------------|-----------|
| Date/time     | Blank line      |           |
| GMP header    | -----           |           |
| Gross (G#)    | Form feed       |           |
| Header line 1 | Time            |           |
| -----         | GMP footer      |           |
| Net (N)       | Transaction no. |           |
| -----         | ID1             |           |
|               | ID2             |           |
|               | ID3             |           |
|               | ID4             |           |
| Delete        | <               | >         |

“>” soft key, “v” soft key  
“↓” soft key

Select dotted line

| LIST  | INDIV.PRT | SELECTION       |
|-------|-----------|-----------------|
| ----- |           | Blank line      |
|       |           | Form feed       |
|       |           | Date/time       |
|       |           | Time            |
|       |           | GMP header      |
|       |           | GMP footer      |
|       |           | Transaction no. |
|       |           | ID1             |
|       |           | ID2             |

Press the “v” soft key  
several times,

Select various printout items

“>” soft key, “↓” soft key

| LIST          | INDIV.PRT | SELECTION      |
|---------------|-----------|----------------|
| -----         |           | Header line 1  |
| Ref. quantity |           | Header line 2  |
|               |           | Scale ser. no. |
|               |           | Product name   |
|               |           | Product info   |
|               |           | Product ID1    |
|               |           | Product ID2    |
|               |           | Product ID3    |
|               |           | Product ID4    |
|               |           | Ref. weight    |

“>” soft key 2x, “<<” soft key

Exit printout

|                              |        |    |       |       |
|------------------------------|--------|----|-------|-------|
| Max                          | 9900 g | d= | 0.2 g | Σ     |
| 0%                           | 100%   |    |       |       |
| 0.0 g                        |        |    |       |       |
| COUNTING:                    |        |    |       |       |
| Input or -Start- with 10 pcs |        |    |       |       |
| ID                           |        |    |       | Start |

CF

Carry out several weighings and then print the results

|       |   |             |
|-------|---|-------------|
| nRef  | + | 10 pcs      |
| wRef  | + | 0.000995 kg |
| Setp  | + | 100 pcs     |
| Min   | + | 100 pcs     |
| Max   | + | 102 pcs     |
|       |   |             |
| n     |   | 6           |
| *N    | + | 0.597 kg    |
| Total | + | 600 pcs     |

# Setup: Overview of Application Parameters

- o = Factory setting  
 ✓ = User-defined setting

## Setup: Application parameters

### Application 1 (Basic application) <sup>1)</sup>

#### o Weighing: Menu item for option H0 only

- Minimum load for automatic taring and automatic printing <sup>2)</sup>
  - ☐ 1 digit
  - ☐ 2 digits
  - ☐ 5 digits
  - ☐ 10 digits
  - ☐ 20 digits
  - ☐ 50 digits
  - ☐ 100 digits
  - ☐ 200 digits
  - ☐ 500 digits
  - ☐ 1000 digits
- Automatic taring: first weight tared <sup>2)</sup>
  - ☐ Off
  - ☐ On
- Tare function <sup>2)</sup>
  - ☐ Standard: Can add a preset tare if tare value is available; however no tare function possible
  - ☐ Special: When a preset tare is entered, the tare value is deleted; however tare function activation is possible
- Factory settings for all application programs <sup>2)</sup>
  - ☐ Yes
  - ☐ No
- Minimum load for automatic tare/printout
  - ☐ 1 digit
  - ☐ 2 digits
  - ☐ 5 digits
  - ☐ 10 digits
  - ☐ 20 digits
  - ☐ 50 digits
  - ☐ 100 digits
  - ☐ 200 digits
  - ☐ 500 digits
  - ☐ 1000 digits

#### Counting

- Minimum load for initialization <sup>2)</sup>
  - ☐ 1 digit
  - ☐ 2 digits
  - ☐ 5 digits
  - ☐ 10 digits
  - ☐ 20 digits
  - ☐ 50 digits
  - ☐ 100 digits
  - ☐ 200 digits
  - ☐ 500 digits
  - ☐ 1000 digits
- Autotare 1st weight
  - ☐ Off
  - ☐ On
- Autostart app when power is on
  - ☐ On
  - ☐ Off
- Accuracy - avg. piece wt. calc.
  - ☐ Display accuracy
  - ☐ Display accuracy + 1 decimal place
  - ☐ Display accuracy + 2 decimal places
- Save weight
  - ☐ Standard stability parameter
  - ☐ Increased stability parameter
- Average piece weight updating
  - ☐ Off
  - ☐ Automatic
- Scale for reference weight
  - ☐ Do not change
  - ☐ WP 1 scale
  - ☐ WP 2 scale
  - ☐ WP 3 scale
- Tare function <sup>2)</sup>
  - ☐ Standard: Can add a preset tare if tare value is available; however no tare function possible
  - ☐ Special: When a preset tare is entered, the tare value is deleted; however tare function activation is possible
- Factory settings for all application programs <sup>2)</sup>
  - ☐ Yes
  - ☐ No

#### Neutral measurement

- Minimum load for automatic taring and automatic printing <sup>2)</sup>
  - ☐ Menu similar to Counting

#### Neutral measurement

- Minimum load for initialization
- Minimum load for initialization <sup>2)</sup>
  - ☐ 1 digit
  - ☐ 2 digits
  - ☐ 5 digits
  - ☐ 10 digits
  - ☐ 20 digits
  - ☐ 50 digits
  - ☐ 100 digits
  - ☐ 200 digits
  - ☐ 500 digits
  - ☐ 1000 digits
- Automatic taring: first weight tared <sup>2)</sup>
  - ☐ Menu similar to Counting
- Automatic start of applications when you switch on the device with most recently saved application data <sup>2)</sup>
  - ☐ Menu similar to Counting
- Accuracy level for calculation of reference value
  - ☐ Display accuracy
  - ☐ Display accuracy + 1 decimal place
  - ☐ Display accuracy + 2 decimal places
- Decimal places in displayed result <sup>2)</sup>
  - ☐ None
  - ☐ 1 decimal place
  - ☐ 2 decimal places
  - ☐ 3 decimal places
- Save weight
  - ☐ Standard stability parameter
  - ☐ Increased stability parameter
- Scale for reference weight
  - ☐ Do not change
  - ☐ WP 1 scale
  - ☐ WP 2 scale
  - ☐ WP 3 scale
- Tare function <sup>2)</sup>
  - ☐ Menu similar to Counting
- Factory settings for all application programs <sup>2)</sup>
  - ☐ Yes
  - ☐ No

#### Animal weighing

- Minimum load for automatic taring and automatic printing <sup>2)</sup>
  - ☐ Menu similar to Counting
  - ☐ Menu similar to Counting
- Minimum load for start
  - ☐ 1 digit
  - ☐ 2 digits
  - ☐ 5 digits
  - ☐ 10 digits
  - ☐ 20 digits
  - ☐ 50 digits
  - ☐ 100 digits
  - ☐ 200 digits
  - ☐ 500 digits
  - ☐ 1000 digits
- Automatic taring: first weight tared <sup>2)</sup>
  - ☐ Menu similar to Counting
- Automatic start of applications when you switch on the device with most recently saved application data <sup>2)</sup>
  - ☐ Menu similar to Counting
- Start
  - ☐ Manual
  - ☐ Automatic
- Minimum load for automatic tare
  - ☐ 0.1% of the animal/object
  - ☐ 0.2% of the animal/object
  - ☐ 0.5% of the animal/object
  - ☐ 1% of the animal/object
  - ☐ 2% of the animal/object
  - ☐ 5% of the animal/object
  - ☐ 10% of the animal/object
  - ☐ 20% of the animal/object
  - ☐ 50% of the animal/object
  - ☐ 100% of the animal/object
- Auto printout of results
  - ☐ Off
  - ☐ On
- Show normal weight after unloading
  - ☐ Threshold for load change
  - ☐ Toggle key
- Tare function <sup>2)</sup>
  - ☐ Menu similar to Counting
- Factory settings for all application programs <sup>2)</sup>
  - ☐ Yes
  - ☐ No

<sup>1)</sup> Setup level for option 12 only > > <sup>2)</sup> for Option H0 only

# Setup: Overview of Application Parameters

## Application 1 (Basic application)

### Weighing in percent <sup>1)</sup>

- Minimum load for automatic taring and automatic printing <sup>2)</sup>
  - Menu similar to Counting
- Minimum load for initialization
  - o 1 digit
  - 2 digits
  - 5 digits
  - 10 digits
  - 20 digits
  - 50 digits
  - 100 digits
  - 200 digits
  - 500 digits
  - 1000 digits
- Automatic taring: first weight tared <sup>2)</sup>
  - Menu similar to Counting
- Automatic start of applications when you switch on the device with most recently saved application data <sup>2)</sup>
  - Menu similar to Counting
- Accuracy for saving weights
  - o Display accuracy
  - Display accuracy + 1 decimal place
  - Display accuracy + 2 decimal places
- Decimal places in displayed result
  - o None
  - 1 decimal place
  - 2 decimal places
  - 3 decimal places
- Save weight
  - o Standard stability parameter
  - Increased stability parameter
- Scale for reference weight
  - o Do not change
  - WP 1 scale
  - WP 2 scale
  - WP 3 scale
- Calculated values display
  - o Residual qty.
  - Loss
- Tare function <sup>2)</sup>
  - Menu similar to Counting
- Factory settings for all application programs <sup>2)</sup>
  - Yes
  - No

## Application 2 (Control functions) <sup>1)</sup>

>o Off

### Checkweighing

- Minimum load for automatic taring and automatic printing <sup>2)</sup>
  - Menu similar to Counting
- Automatic taring: first weight tared <sup>2)</sup>
  - Menu similar to Counting
- Automatic start of applications when you switch on the device with most recently saved application data <sup>2)</sup>
  - Menu similar to Counting
- Tare function <sup>2)</sup>
  - Menu similar to Counting
- Checkweighing range
  - o 30% to 170%
  - 10% to max. load
- <SET> control output
  - o .SET\* control signal
  - Ready to operate (for process control systems)
- Activation of port lines
  - Off
  - Always
  - At stability
  - o Within checkweighing range
  - When stable and in checkweighing range
- Type of checkweighing input
  - o Target, min, max, weight
  - Target, min in %, max in %
  - Target, min.-, max.-Tolerance
- Auto printout of results
  - o Off
  - On
  - Only OK values
  - Only nonconforming values
- Checkweighing toward zero
  - o Off
  - On
- Factory settings for all application programs <sup>2)</sup>
  - Yes
  - No

### Classification

- Minimum load for automatic taring and automatic printing <sup>2)</sup>
  - Menu similar to Counting
- Min. load for class 1 lower limit
  - o 1 digit
  - 2 digits
  - 5 digits
  - 10 digits
  - 20 digits
  - 50 digits
  - 100 digits
  - 200 digits
  - 500 digits
  - 1000 digits
- Automatic taring: first weight tared <sup>2)</sup>
  - Menu similar to Counting
- Automatic start of applications when you switch on the device with most recently saved application data <sup>2)</sup>
  - Menu similar to Counting
- Tare function <sup>2)</sup>
  - Menu similar to Counting
- <SET> control output
  - o .SET\* control signal
  - Ready to operate (for process control systems)
- Activation of port lines
  - Off
  - Always
  - At stability
  - o At stability
- Number of classes
  - o 3 classes
  - 5 classes
- Parameter input
  - o Weight values
  - Percentage
- Auto printout of results
  - o Off
  - On
- Factory settings for all application programs <sup>2)</sup>
  - Yes
  - No

<sup>1)</sup> Setup level for option I2 only

<sup>2)</sup> For option H0 only

### Application 3 (data records) <sup>1)</sup>

- ☐ Off
- Net total formulation**
  - Minimum load for automatic taring and automatic printing <sup>2)</sup>
    - Menu similar to Counting
  - Minimum load for autosave
    - ☐ 1 digit
    - 2 digits
    - 5 digits
    - 10 digits
    - 20 digits
    - 50 digits
    - 100 digits
    - 200 digits
    - 500 digits
    - 1000 digits
  - Automatic taring: first weight tared <sup>2)</sup>
    - Menu similar to Counting
  - Printout when saved
    - Off
    - ☐ Individual printout of components
    - Component printout
  - Tare function <sup>2)</sup>
    - Menu similar to Counting
  - Factory settings for all application programs <sup>2)</sup>
    - Yes
    - No
- Totalizing**
  - Minimum load for automatic taring and automatic printing <sup>2)</sup>
    - Menu similar to Counting
  - Automatic taring: first weight tared <sup>2)</sup>
    - Menu similar to Counting
  - Automatic start of applications when you switch on the device with most recently saved application data <sup>2)</sup>
    - Menu similar to Counting
  - Save value <sup>1)</sup>
    - ☐ Net
    - Calculated
    - Net + calculated
  - Autosave mode
    - ☐ Off
    - On
  - Minimum load for autosave
    - ☐ 1 digit
    - 2 digits
    - 5 digits
    - 10 digits
    - 20 digits
    - 50 digits
    - 100 digits
    - 200 digits
    - 500 digits
    - 1000 digits
  - Source of data for autosave
    - ☐ Application 1
    - Application 2
  - Printout when saved
    - Off
    - ☐ Individual printout item
  - Evaluation mode, MR function <sup>1)</sup>
    - ☐ Intermediate evaluation
    - Final evaluation
  - Delete memory when product is changed
    - ☐ On
    - Off
  - Tare function <sup>2)</sup>
    - Menu similar to Counting
  - Factory settings for all application programs <sup>2)</sup>
    - Yes
    - No

### Setup: Application parameters <sup>1)</sup>

- Autotare 1st weight**
  - ☐ Off
  - On
- Minimum load for automatic tare/printout**
  - 1 digit
  - 2 digits
  - 5 digits
  - ☐ 10 digits
  - 20 digits
  - 50 digits
  - 100 digits
  - 200 digits
  - 500 digits
  - 1000 digits
- Autostart app when power is on**
  - On
  - ☐ Off
- CF function in applications**
  - ☐ Clears all applications
  - Clear only selected applications
- Tare mode**
  - Standard: Can add a preset tare if tare value is available; however no tare function possible
  - Special: When a preset tare is entered, the tare value is deleted; however tare function activation is possible
- Factory setting Application only**
  - Yes
  - ☐ No

<sup>1)</sup> Setup level for option 12 only  
<sup>2)</sup> For option H0 only





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